

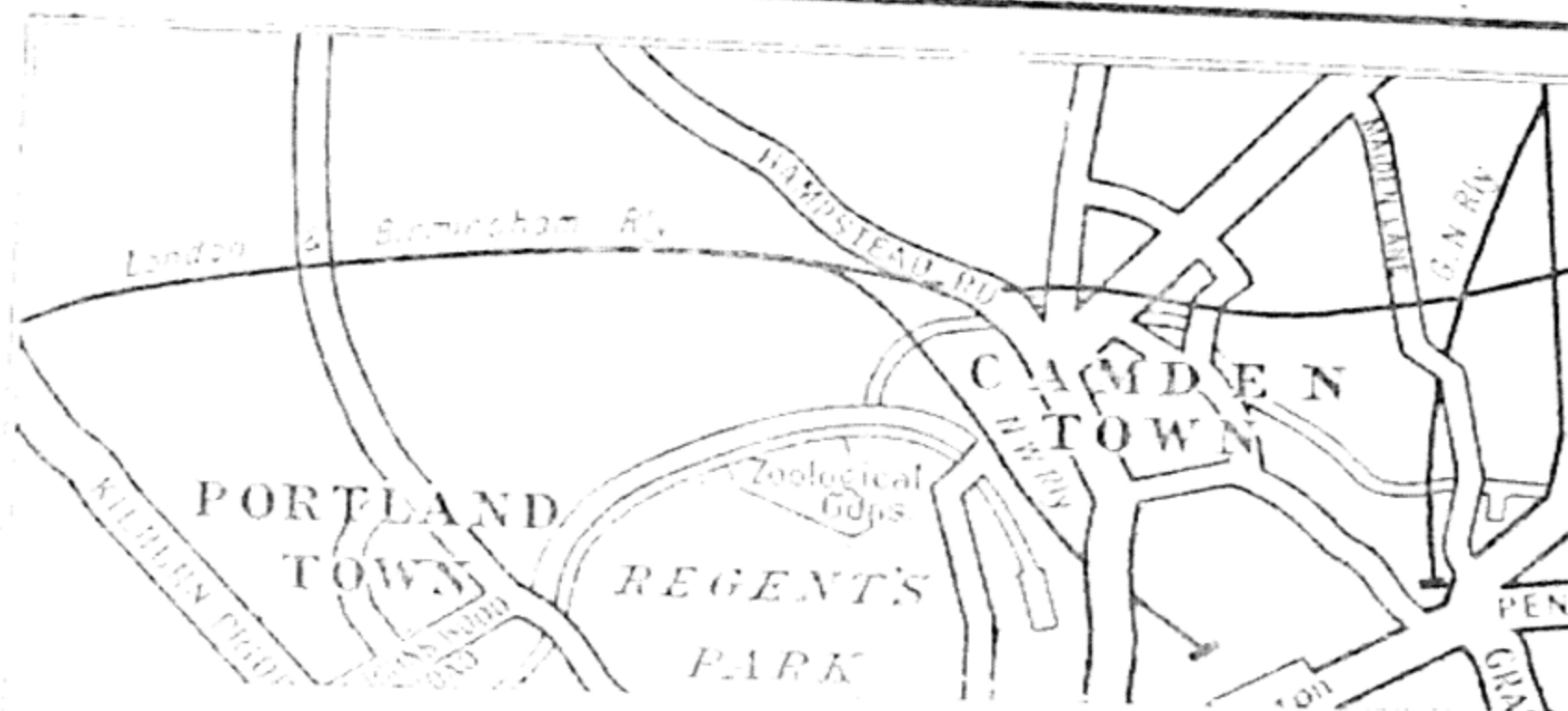
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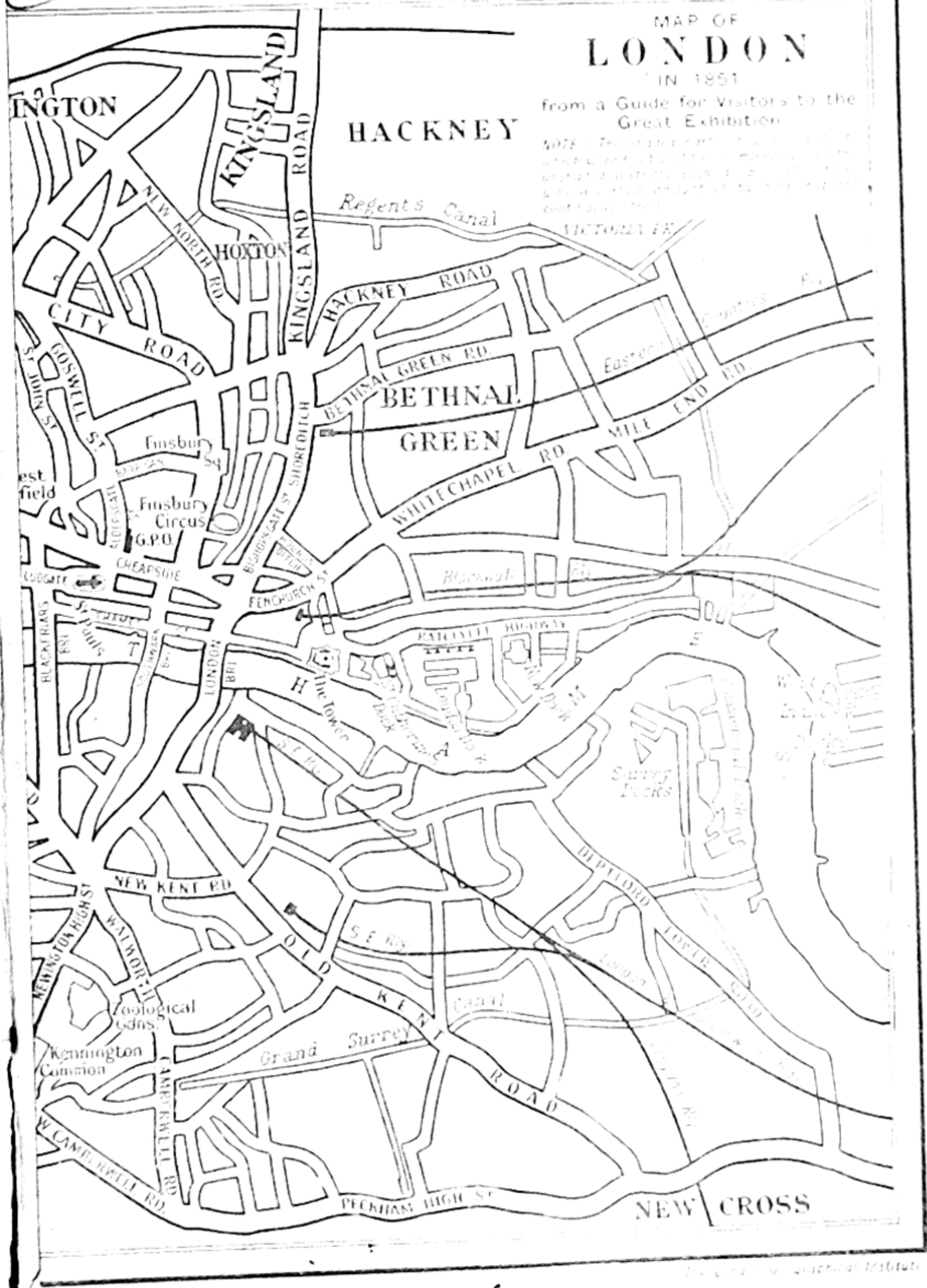
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MAP OF LONDON

IN 1851

from a Guide for Visitors to the
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THE PIERS PLOWMAN
SOCIAL AND ECONOMIC HISTORIES
BOOK VII

1830 to the Present Day

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GENERAL EDITOR, E. H. SPALDING, M.A.

*Principal, Bingley Training College,
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Of alle maner of men, the meue and the riche,
Worching and wandryng, as the worlde asketh."

The Vision of Piers Plowman.

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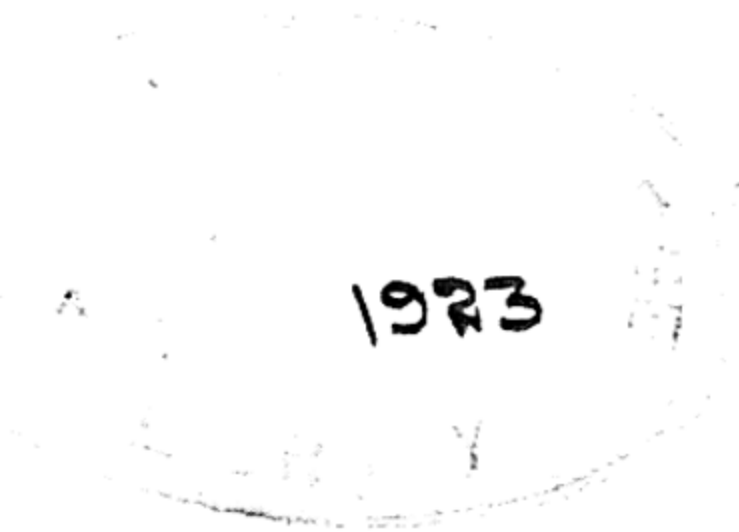
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PREFACE

THESE books have been written in order to depict, for the young of whatever age, some of the conditions and changes which have marked the lives of ordinary folk in past times. They trace, very simply, through the centuries, the development of England on its social side; they deal with the ways in which people lived, earned their daily bread, traded, worshipped God, travelled, amused themselves, or endured the ups and downs of life. The national story in its main outlines has been well and often told; therefore the writers of this series have assumed that their readers have at hand one of the general political accounts. The present series is in any case intended merely as an introduction to a great subject, which, when studied more fully, touches at many points literature, art, music, handicraft, the dance, the drama, and other human activities. The lists of works for additional reading are therefore not to be neglected.

Social history is important, not merely because it gives the background for the great events of the past, but also because it enables us to understand, in some measure, the motives which have swayed or led great masses of plain men. Political movements, in fact, often arise out of social conditions, while great political changes are important because of their influence on everyday human life. The two aspects of history, therefore, the social and the political, ought not to be studied entirely apart. They explain each other.

A famous old schoolbook, translated into English in 1651, gives the following advice to the writers of history books :—

“When matters atchieved are related, this is a storie; when things feigned are told, it is a tale. *Those* let an historian rehears; but to record *these* in chronicles, let him account it a mortal offens. And that it may bee manifest that they are the verie things themselves, not forged devices foisted in, let him set down in his commentaries all the matter, together with the circumstances when, how, where, etc.”

These principles the writers in this series have endeavoured to honour.

The writers of this part wish to thank the Palestine Exploration Fund and Professor MacAlister for permission to use the photograph of the High Place at Gezer, and also Sir Daniel Hall, Mr. Seebohm Rowntree, and Mr. George Edwards for permission to quote from their books.

E. H. S.

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PIERS PLOWMAN SOCIAL AND ECONOMIC HISTORIES

BOOK VII

CHAPTER I

VILLAGE LIFE AND FARMING (1830-1875)

I. DARK DAYS IN FARMING (1830-1850)

OUR English countryside is to this day one of the loveliest things which earth has to show. The lowlands have their timbered and thatched farms and cottages, their mellow houses of brick and tile, their tangled hedgerows. The hill districts have their little grey stone villages nestling in green valleys or perched on sunny slopes. None of these lovely things are of our making ; we inherit them from our forefathers who lived in our villages before the days of steam-engines and electricity.

In 1830 England had more of this outward beauty than it has now. The age of steam had indeed begun, but the first passenger railway had only just been made. The streets of ugly houses which have marred so many of our villages had not yet appeared. But the beauty of the village was even then in many parts of England only a survival, for the life of the old English village had been wrecked in the previous sixty years, and the old world of the village was slowly dying. The traveller who got down from the mail-coach and ventured into the village in any of the counties south of the Trent

found, as a rule, that the sturdy freeholder of earlier days had all but disappeared; the farmers were tenants of landlords, and were often in difficulties with their rents. In many parts of the country farmhouses stood empty, and lands lay untilled and covered with thistle and weeds, because the tenants had been ruined and no one would take the farms. In almost all counties south of Trent a large proportion of the farmers were poorly fed and clothed. Landlords could not afford to repair farm buildings, and moss-grown roofs which let in the wet were everywhere to be seen. Farmers were ignorant and disheartened, and would not try new ways. The labourers also were sullen and depressed or even fiercely rebellious. In 1830 there broke out the last great peasants' revolt.* The trouble began in Kent; it spread to Sussex, Hampshire, Wiltshire, Dorsetshire, Berkshire, Gloucestershire, Oxfordshire and Buckinghamshire, and even to Norfolk, Suffolk and Essex. It was crushed with a stern hand; 400 were imprisoned, 457 were transported, and 9 men and boys were hanged.

This sad epoch in village life lasted for the farmer till about 1850, and for the labourer till a much later day. We have much contemporary evidence of it. George Eliot, born in 1819, and brought up on a farm in Warwickshire, has described it, notably in "*Middlemarch*." There we see Mr. Brooke, the landlord, with his easy shuffling walk who "had never been insulted on his own land before," his tenant Mr. Dagley with his "farming conservatism, which consisted in holding that whatever is, is bad, and any change is likely to be worse," and "overworked Mrs. Dagley—a thin, poor woman, from whose life pleasure had so entirely vanished that she had not even any Sunday clothes which could give her satisfaction in preparing for Church."

* Read the account of it in Hammond's "*The Village Labourer*," Chaps. XI. and XII.

The actual facts of the farming situation, which George Eliot wove into her fiction, are to be found in the report of a Select Committee appointed by the House of Commons in 1833. The Committee declared that farmers had been going downhill ever since the peace in 1815, and that wages of labourers had been steadily lowered, the highest in the South being 12s. a week near London and other large towns. Labourers who, within living memory, had eaten bacon and cheese, now lived in some counties, almost entirely on potatoes.* In the eastern counties, in the Midlands, and in Wiltshire, Dorsetshire, Somerset and Devon, distress was universal. Only in the counties north of Trent were labourers better off.

The conditions of labourers in the Midlands in the early 'forties are illustrated in the autobiography of the famous Warwickshire labourer Joseph Arch, who died only in 1919. The son of a Warwickshire shepherd whose forefathers had fought under Cromwell at Edgehill, he was born in 1816 and brought up in a little timbered cottage, with open chimney, blackened beams, and half an acre of garden. The cottage had been bought freehold by his grandparents with £30 which they had saved up in an old stocking, and the family was therefore in greater independence than most peasants of the same class. Yet this is what he writes :

"The food we could get was of very poor quality and there was far too little of it. Meat was rarely, if ever, to be seen on the labourer's table; the price was too high for his pockets. In many a household even a morsel of bacon was considered a luxury. Flour was so dear that the cottage loaf was mostly of barley. Tea ran to six or seven shillings a pound. What, in the name of necessity, were the people to do? They could not grow potatoes; they had no allotments then; they had no hope of them, and the bulk of the labourers had no gardens. Well, these people in order to keep body and soul together and some kind of roof over their miserable heads were driven to steal the food they could not get for love or money. Yes, would-be honest Englishmen were forced to become common thieves. They stole turnips from

* This crop came into general cultivation at the time of the Napoleonic Wars.

the fields, potatoes when they could get them, and any other edible thing they could lay hands on. As they were unable to procure fresh meat honestly, they stole that as well. Poaching became so prevalent that it is hardly an exaggeration to say that every other man you met was a poacher."

All three classes in the farming community were in fact depressed—landlords and farmers as well as labourers. The depression persisted as late as 1850. In that year *The Times* newspaper sent a special correspondent travelling round England. He reported as follows :

" Farm buildings everywhere are generally defective. The inconvenient ill-arranged hovels, the rickety wood and thatch barns and sheds, devoid of every known improvement for economising labour, food and manure, which are to be met with in every county of England, and from which anything else is exceptional in the southern counties, are a reproach to the landlords in the eyes of all skilful agriculturists who see them. One can hardly believe that such a state of manners is permitted to exist in an old and wealthy country. Buildings of such a character that every gale of wind brings something down which the farmer must repair, and of so combustible a nature that among ill-disposed people he lives in continual dread of midnight conflagration. With accommodation adapted to the requirements of a past century, the farmer is urged to do his best to meet the necessities of the present."

The causes underlying this sad period of village life have been partially discussed in the preceding volume.* The old open-field villages had been rapidly enclosed by Acts of Parliament passed by thousands between 1760 and 1830. As the change took place the little freeholder of earlier days almost disappeared. With the disappearance of the common the labourer often lost his cow, his pig, his sheep, and his geese. The small village squire too often gave place to the big landlord owning land in many villages. Such a landlord necessarily knew less of the village folk. Many big landlords, it is clear, had not yet learned how to manage their huge estates. The good landlord at the present day employs a well-educated land agent, so that he may know what improvements in farm buildings and in land drainage the farmers

* See "*Piers Plowman Social and Economic Histories*," Book VI., Chaps. II. and III.

need.. But in those days the old-fashioned half-educated land steward was only just beginning to give place to the modern land agent.

Another trouble, as the Committee of 1833 showed, was that farmers as a whole had not recovered from the bad effects of their speculations during the great Napoleonic Wars. In those days, when corn prices had been very high, many farmers had ploughed up clay-lands, and had planted corn. In the early part of the 19th century artificial drain-pipes had not yet been invented; therefore clay-lands were very damp and were fit only for pasture. When peace came, and prices fell, the farmers found that these lands produced too poor a crop for profit, and yet it was not easy to restore the grass. "I have at least twelve or fourteen heavy-land farms now, that I cannot get an offer for," said one landowner. Much the same mistake had been made in ploughing up the chalk-lands of the Sussex and Hampshire Downs, which from time immemorial had pastured sheep. Another error made by many small landowners under the feverish excitement of war prices was that of mortgaging their freeholds, in order to raise money to rent more land; the burden of the mortgage now that prices and profits had fallen was very great, and there was no capital for improvements, or even for manure. One witness in 1833 knew "old enclosed land, run out by cropping, which in the time of war was worth 20s. to 22s. an acre which is not worth more than 7s. to 8s."

Another encumbrance on farming at the opening of our period was the result of the old Poor Law.* The mistake had been made, from 1795 onwards, of supplementing low wages by poor relief; the result was that wages fell to starvation point, rates rose till the farmers were ruined, and

* See "*Piers Plowman Social and Economic Histories.*" Book VI., Chap. IX., and the present book, Chap. XI.

many of the labouring people were demoralized by the whole system of doles. Though the Poor Law was reformed in 1834 it left bad effects, and wages remained very low. Moreover the new law was so administered that the aged, the sick, and the able-bodied alike, if they could not support themselves, had to go into barrack-like workhouses. Outdoor relief almost ceased, and the fear of the "Union" hung throughout his life over every poor labourer's head. The old Poor Law, too, had encouraged men to have more children than a village could find work for, and for many a long year the competition of these poor people for work kept the wages very low.

Yet another cause of the bad state of farming lay in the general depression of trade and industry throughout the whole country, culminating with a terrible five years from 1838 to 1842, when weavers, spinners, miners and iron-workers were either receiving starvation wages, or were actually in the workhouse. This reacted badly on agriculture, for the farmer lacked the purchasers who would naturally have bought his wares. Richard Cobden knew of people in the manufacturing districts who fed on nettles, rotten apples and swedes. "I could tell you of mothers dividing a farthing salt herring, and a halfpennyworth of potatoes among a family of seven," wrote one traveller in 1841. At the best the labouring people in town and country lived on bread, and the market for meat, butter, cheese and poultry was depressed.

But perhaps the most important factor in the state of affairs was the long list of customs duties which had grown up with the centuries and had been increased by the war. A Select Committee, appointed in 1840 by the House of Commons, showed how trade and industry were being throttled by the heavy duties levied at the ports, particularly by those on raw materials.* There were also high duties on foods. Those

* See Chap. VI., p. 136.

on corn had been made even heavier at the peace in 1815; and though the Corn Law was modified in 1828 by a sliding scale, it was the corn dealers and not the farmers who profited by its operations. This sliding scale was again altered early in 1842, when the Tory Sir Robert Peel was Prime Minister. The following table shows how the new rates varied with the price of wheat :

SLIDING SCALE OF 1842.

Average price of wheat per quarter.	Duty per quarter.		
	£	s.	d.
Under 51s.	1	0	0
51s. to 52s.		19	0
52s. to 55s.		18	0
55s. to 56s.		17	0
56s. to 57s.		16	0
57s. to 58s.		15	0
58s. to 59s.		14	0
and so on to			
65s. to 66s.		7	0
66s. to 69s.		6	0
69s. to 70s.		5	0
70s. to 71s.		4	0
71s. to 72s.		3	0
72s. to 73s.		2	0
73s. and over		1	0

It was thought that this sliding scale, in which the duty fell as the price rose, would give the farmers a steady price for corn, because it would encourage the dealers to import more corn as the price in England increased. As a matter of fact it induced the dealers, in years of bad harvest when the price was rising, to keep their corn back in the bonded warehouses at the ports in order to force the price up to 73s., because then they could import it at a duty of only 1s. Thus in years of bad harvest the English farmers were liable first to see prices rise, and then when they hoped for a profit

suddenly sink again, because of the operations of the dealers. A very bad example of this occurred in 1842. The 1841 harvest had been poor, the following autumn had been wet, and the spring of 1842 was both rainy and cold. The corn dealers, trusting that the price would rise to 73s. a quarter, hoarded in the bonded warehouses at the ports immense supplies of corn, at the very time when people were starving for food. The Radical leader O'Connell said in the House of Commons :

“The people are hungry, let them eat. There are at this moment 1,500,000 quarters of wheat lying in bond, waiting until prices become high enough.”

By June there were two million quarters so held, and the price of wheat had reached 64s. 5d. a quarter. Suddenly the weather improved. The summer proved fine and hot. The harvest was excellent, and was gathered a fortnight earlier than usual. The corn dealers were bitterly disappointed, for prices began to fall. In the middle of August they suddenly took the whole of the two million quarters of wheat out of the warehouses, paid the duty, and put the corn on the market. The price of wheat in consequence fell to 40s. Many even of the dealers were ruined, and the unfortunate farmers got very poor prices for their golden harvest. Thus the very Corn Law which had been passed to protect the farmer and the landlord from foreign competition, was proving one source of the ruin of the English landed interest.

In 1841, when Sir Robert Peel, the leader of the Tory party, became Prime Minister, he was deeply concerned with the misery of the people. The Tories were the party of the landlords; they had promised to protect the farmer by maintaining the Corn Laws. Sir Robert Peel, however, began to study the report of the Select Committee of 1840. He came to the conclusion that farming and all other occupations would profit in the long run if Englishmen

could spend more freely because of low prices. He put it thus :

“ We must make England a cheap country to live in. Enable them to consume more by having more to spend.”

Between 1842 and 1845 he steadily reduced or removed the multitudinous duties on raw materials, on foods and on all sorts of other commodities at the ports. In consequence raw materials became cheaper, and industry and trade revived ; as factories opened again, the working-classes were able to buy more food. This helped the farmer, in spite of the fact that Sir Robert Peel had taken off customs duties from cattle, meat, butter, cheese, bacon and apples, and thus encouraged their import from abroad.

As yet Sir Robert Peel had not dared to touch the Corn Laws for fear of what the Tory party would say. Suddenly however, in 1845, the potato harvest failed in Ireland, in Kent, in the Isle of Wight, in Holland, Belgium, Denmark, Sweden and Russia. The Irish lived mainly on potatoes, and only cheap corn in abundance could save their country from famine. Unable to persuade his party to repeal the Corn Laws, Sir Robert Peel resigned, and the Whigs came into office. They failed to form a ministry. Then Sir Robert Peel explained to his party the gravity of the national crisis. Most of them consented to support him, and he came back into office pledged to repeal the Corn Law of 1842. By the law which he introduced in 1846 the duty on corn was reduced to the nominal one of 1s. on the quarter, and to all intents and purposes free trade in corn thus began.

Two Radical leaders, Cobden and Bright, had for years worked for the abolition of the Corn Laws. They had founded the Anti-Corn Law League in 1838, and had held vast meetings of Whigs and Radicals all over the country. Yet a Tory Prime Minister had carried the repeal. It remained for the next period to show what would be the effect on farming.

II. THE GOLDEN AGE OF THE GREAT FARMER AND LANDLORD (1850-1875)

When Free Trade came many farmers and landlords expected to be ruined. They argued that now that corn, meat, cheese and other farm products which had hitherto been excluded or highly taxed at the ports, could be brought in from abroad, prices would be so low that it would pay no one to produce these things in England. They were mistaken. For nearly thirty years prices remained fairly stable ; for example, wheat, which had averaged 56s. a quarter from 1815 to 1846, was on the average 52s. a quarter from 1847 to 1881. Meanwhile, for those farmers and landlords who had money to spare and intelligence to know what to do with it, a wonderful period of prosperity began.

Various causes were already at work. As early as 1837 some big landlords and others interested in farming had realized that knowledge and brain power were needed if farming was again to become prosperous. Arthur Young, in the reign of George III., had roused up the countryside by teaching farmers what their neighbours were doing ; but his society, the Board of Agriculture, had died out in 1822. Some farmers, as late as 1830, were so ill-educated that they could not even read. It was difficult to help such men as these to keep up with the times. In 1837, however, the Royal Agricultural Society was founded. It began to hold its annual show, and offered prizes for fat cattle and other farm products ; it started its famous *Journal*, in which well-educated farmers and landlords could read what others were doing ; it once more made farming fashionable. At the same time, the experiments and discoveries of scientific men began to prove useful to such farmers as could profit by them. When Arthur Young began his work, farming knowledge, even of the best, was based merely on observation ; men had

little idea why certain methods produced certain results. Such natural sciences as chemistry, botany, geology and physiology were as yet in their infancy. Men did not even know that the earth we till is a compound substance, or understand the various chemical elements of which different soils are composed. But in 1803 Humphry Davy, then aged twenty-three, had begun to lecture on the connection of chemistry with vegetable life; and in 1840 a book was published, written by the great German chemist Justus Liebig, which dealt with the same subject. In 1845 there was founded at Cirencester in Gloucestershire the first of the great English Agricultural Colleges, to give scientific training to those who could afford it. About this time scientific men introduced the idea of artificial manures; bones were crushed up into powder and laid on the earth; guano, obtained from the wild birds living on the islands near Peru, began to be imported; and many chemicals such as nitrate of soda, and sulphate of ammonia obtained in distilling coal-gas, began also to be used as manure.

It was during this period of scientific experiment that a young country gentleman, afterwards known as Sir John Bennet Lawes, began his work for farming. In 1837, at the age of twenty-three, on his own estate at Rothamsted in Hertfordshire, he set up a chemical laboratory, and began, to his mother's great surprise, to test by experiment the effect of different manures on plant life. In 1843 he founded on his own farm an agricultural experiment station, which has since become famous with farmers all over the world. He appointed to collaborate with himself a young chemist, J. H. Gilbert, and from 1847 onwards these two began to publish reports of their experiments in the *Journal* of the Royal Agricultural Society.

Another beneficent influence was the invention in 1843, by a working man, of a drain-pipe made of hard clay.

Hitherto farm land had been drained either by ploughing the soil into high wide ridges * separated by deep depressions, or by cutting trenches in the pasture lands, filling them with branches and covering them with turf. Now it was possible effectively to drain the heavy clay-lands.

These ideas came in but slowly as long as transport was difficult ; but with the inrush of railways, from about 1845, knowledge began to spread. As early as 1826 a mechanical

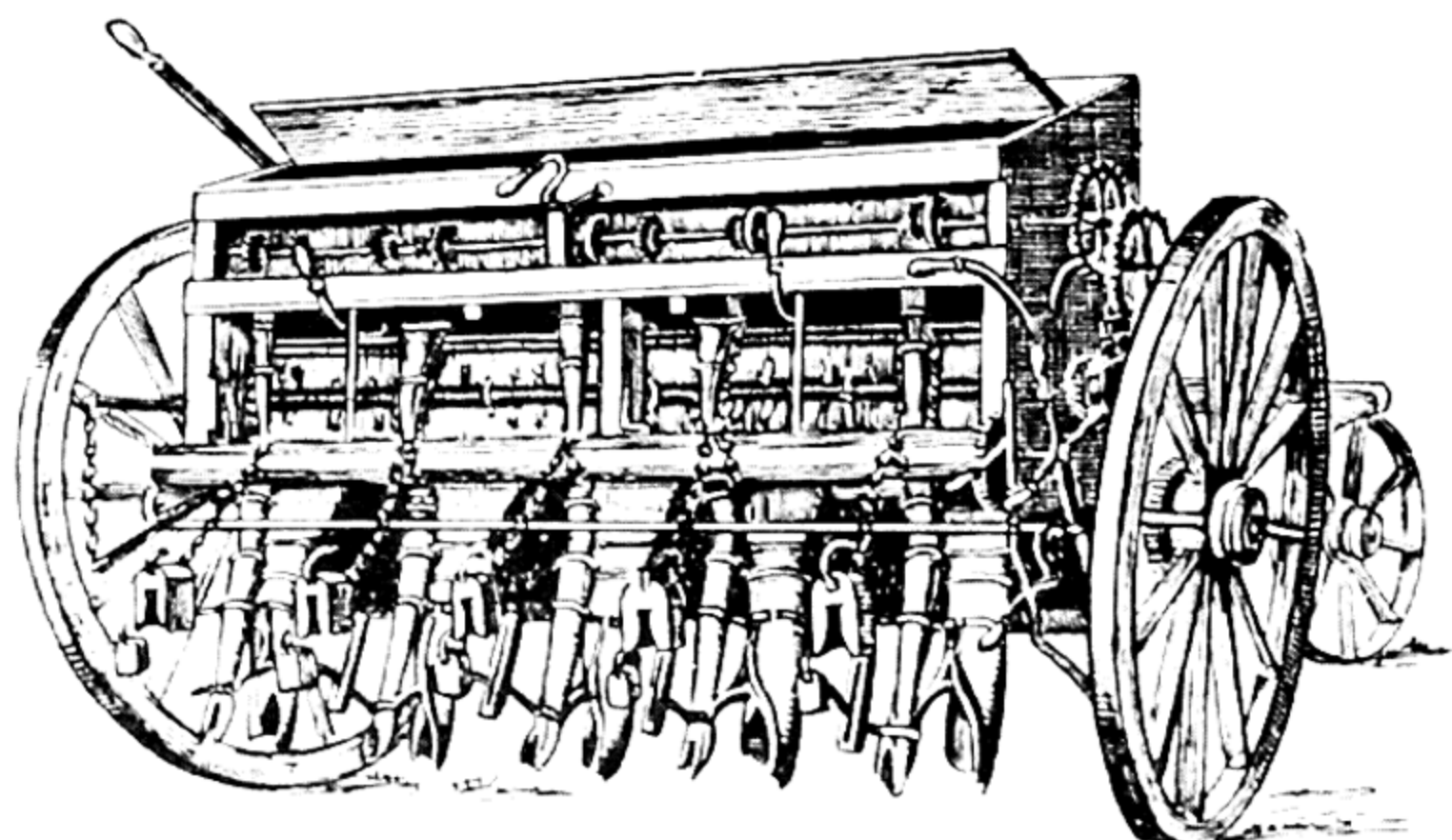


FIG. 1.—Garrett's Suffolk Lever Corn-Drill, 1858.

From Sleigh's "The Book of Farm Implements," 1858.

This corn-drill, a new pattern in 1858, is still to be seen on our farms. It cost at that time £36 10s. The seed was put into the seed boxes at the top, and was delivered by revolving discs and cups into shoots, and thence to the coulters seen at the bottom of the picture, which pierced the soil and sowed the seed. The depth to which the coulter penetrated the soil was regulated by the weights which are seen attached to the coulter levers. Two or more horses and one man were needed.

reaper had been invented : improved ploughs, harrows and steam-worked threshing machines were already to be had. But it had been difficult to drag these things along the old rough bye-roads, and the mechanical reaper could not be

* Where the old drainage system has been left alone under grass before modern drainage came, these high ridges and deep furrows can still be seen, especially in the Mallee.

used on the wave-like billows of the old ridged plough-lands. Hitherto, moreover, cattle had walked to market, often coming hundreds of miles along the old "green lanes" which linger still in many parts of the country; they had lost weight on the way. Milk, fruit, vegetables, butter and eggs could not travel far to market. But railways began to alter all this. Thus many influences were beginning to tell just at the time of the coming of free trade.

Fearful of a fall of prices, landlords and farmers with capital and intelligence set to work about 1850 to improve their methods. Landlords pulled down the wretched old cowsheds and the moss-covered barns dripping with damp, and erected new ones. Farmyards and farm-lands were drained, and fences were repaired for tenants likely to profit by improvements. Many farmers flung their heavy old-fashioned ploughs, their scythes and



FIG. 2.—Broadcast Sowing in 1858.

From Slight's "The Book of Farm Implements," 1858.

sickles and flails into the corners of barns. Instead of the sower with his basket, a drill, drawn by a horse, planted the seed in long straight lines at regular intervals, so that light and air could reach the soil and weeds be removed. The new reaping machine cleared the harvest, and when threshing-time came a black and snorting engine drew in the sheaves of corn, and neatly divided straw and chaff from grain.

But the old-fashioned farmers could do none of these things. They had not the capital to buy the new machines and fertilizers; they had neither knowledge nor enterprise

to adopt the new ways. Many of them were ruined : they became labourers, or they emigrated to the colonies, or they went into the towns. Many landlords threw numerous small farms into fewer big ones, and let them to new tenants of an enterprising type from the towns. Others took farms under their own management, appointing farm bailiffs at fixed wages to live in the old farmhouses under the eye of the educated land agent. Between 1851 and 1871 the number of farm bailiffs in England rose from 10,000 to 16,000 odd. Farmers were no longer seen at market in smock frocks, but in coats and waistcoats like the gentry and driving their gigs.

At the same time the appearance of the countryside changed. Little fields were thrown together ; wild hedge-rows were clipped and trimmed ; marshlands were drained ; wild animal life began to grow scarcer. Herds of sleek cattle fed in the meadows. Healthy crops of corn, clover, turnips, mangolds and artificial grass grew in the plough-lands. After 1820 the movement for the enclosure of open-field villages had died down ; between 1830 and 1844 the average number of villages enclosed in a year had been only about one-sixth of the number in the ten years before 1820. Many open-field villages therefore still existed. But in 1845 a General Inclosure Act was passed whereby the process was made easier by the appointment of a permanent body of commissioners, and after 1850 the remaining open-fields and a large proportion of the surviving commons were enclosed. Gypsies began to disappear. In 1859 steam ploughs were introduced. The average yield of wheat per acre in England rose between 1850 and 1868 from $26\frac{1}{2}$ bushels to 28 bushels, and even Ireland at 24 bushels compared well with France at 16 bushels. As early as 1854 a French authority said, " English agriculture, taken as a whole, is at this day the first in the world."

The fear of free trade had as yet proved groundless, for the bulk of the English food was still produced on English farms. Several causes account for this. In the first place, the countries from which in 1850 we imported wheat were, in order of importance, France, Prussia, the United States, and the lands bordering the Black Sea ; and 78 per cent. of the corn imports were from Europe. An old country like France could not greatly increase her export of corn ; and less developed countries such as Russia, the United States and Canada could not at once take advantage of our free trade, but must have time to break up fresh plough-lands, and to build railways to carry their corn to the coast. It is clear that the mere opening of our ports to corn in 1846 could not immediately lead to the inrush of vast supplies. In the second place, from 1850 to 1875 a succession of wars handicapped in turn these very countries ; from 1853 to 1856 the Crimean War prevented the export of corn from the Black Sea shores ; from 1860 to 1865 the Civil War raged in the United States, and in 1870-1871 the Franco-Prussian War was fought. From 1850 to 1875 wheat averaged 50s. a quarter ; it never sank lower than 40s., and in 1855 it rose to 78s. Meanwhile the prosperity in English industry produced by free imports of raw materials gave work to every one, and Trade Unions raised wages for the workmen in many industries. Very many Englishmen therefore could afford to buy more and better food than before ; cheese and butter, eggs and meat fetched good prices.

The only class in the village which failed to profit was that of the agricultural labourer. A series of reports, issued by Government Commissions between 1868 and 1870, show that he was no better off than in 1843. Wages had nominally risen ; from 1851 to 1855 they averaged 10s. a week for England and Wales, and from 1866 to 1870 they averaged 11s. 9½d. But prices of most things had risen at a greater

rate.* Moreover, the rise in wages was mainly in the counties north of the Trent ; thus wages in Yorkshire were 14s. to 15s., in Lancashire 15s. to 16s., and in parts of Cumberland, Durham and Northumberland they were 18s. In the four worst counties of Wilts, Dorset, Somerset and Devon, on the other

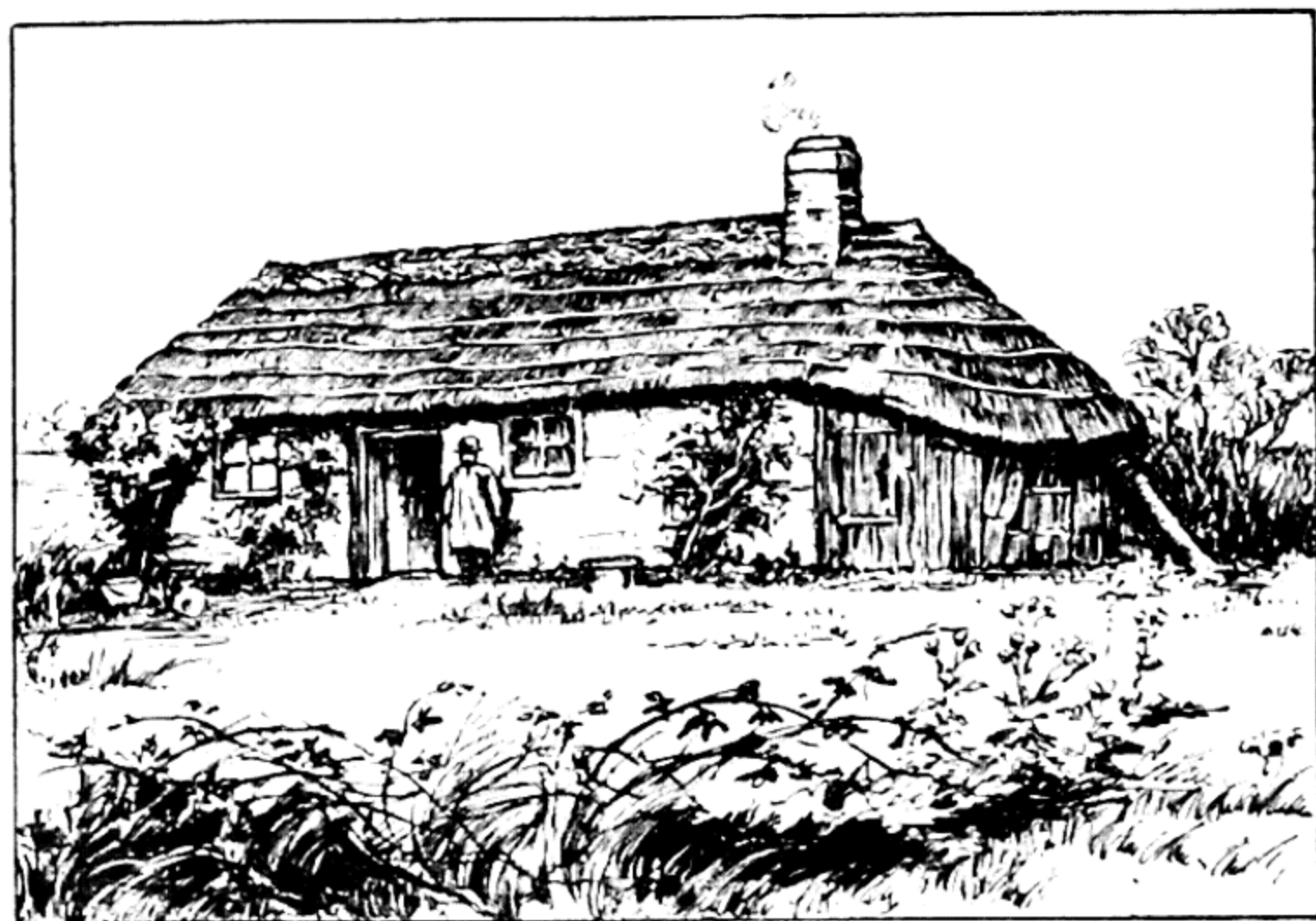


FIG. 3.—A Labourer's Cottage, still inhabited, in 1872.

From Heath's "English Peasantry."

The cottage was 7 yards long and 3 yards wide, and 10 feet at the highest point of the open thatched roof. It was divided into two small rooms. The ground was roughly paved with large stones, with earth between. "John P. had lived there a quarter of a century. His predecessors were a man, his wife and six children, all of whom, he said, slept in a bedroom 9 feet square."

hand, they were only 8s. and sometimes less. Houses were as bad as ever: two-roomed cottages were very common ; they were often covered with roses and creepers, but had damp floors below the road level, and thatched roofs letting

* One cause of the rise of prices from 1850 to 1873 all over the civilized world was the great discovery of new supplies of gold in California and in Australia, which lowered the value of gold coinage, and therefore cheapened all money represented by gold coins, as was English money.

in the wet. Food was still very poor, consisting often of potatoes, dry bread, greens and herbs, and "tea which was coloured water." The smock frock was slowly dying out, and clothes were procured second hand from the old clothes shop. Women and children worked in large numbers in the fields, women earning 7d. to 9d. a day, and children 4d. to 5d.

At the same time the remaining cottage industries rapidly disappeared. In the eastern and south-western counties factories finally put an end to the handloom, and straw-plaiting and other crafts also vanished. In villages near the towns this was a blessing, for hand industries were generally very badly paid and there was no outside supervision. But to the heart of the country the old handicrafts had brought life and interest, and their disappearance was a real loss. Thus year by year the most vigorous people emigrated or drifted to the towns. From

1851 to 1861 the population of the agricultural counties, which had hitherto steadily risen, came to a standstill, and in some cases actually declined. From 1861 to 1871 it rapidly decreased. The result was that while energy and ambition were growing amongst farmers, inertia seemed to settle upon the labourers. Poor "Hodge" became a byword.

A vivid picture of the life of a labourer of this time is given in the autobiography of George Edwards, afterwards a Member of Parliament, who was born in 1850 in a little



FIG. 4.—A Countryman's Smock-frock in 1872.

From a sketch of the Birmingham Onion Fair in "The Illustrated London News," 1872.

village ten miles from Norwich. He was the youngest of a family of seven children, and his father, who had been in the army under George IV. and William IV., took any employment he could get. His mother, working sometimes for sixteen hours out of the twenty-four, earned on the average only 4s. a week at hand-loom weaving. The cottage in which they lived had two bedrooms, in which slept father, mother and seven children. The father left home every morning before it was light and returned after dark ; even on Sundays he scarcely saw his children. When George was four years old the Crimean War began, and prices rose. The quartern loaf cost 1s., sugar was 8d. a pound, tea 6d. an ounce, and cheese 1s. 6d. a pound. He thus describes his earliest recollections :

" My father was at this time taking 8s. per week of seven days. I was then four years of age, and the hardships of those days will never be erased from my memory. My father's wages were not sufficient to buy bread alone for the family by 4s. per week. My eldest brother, Joseph, who was twelve years old, was at work for 1s. 6d. per week, my second brother John, ten years old, was working for 1s. 2d. per week. My sister worked filling bobbins by the aid of a rough hand-machine to assist my mother in weaving. . . .

" In order to save the family from actual starvation, my father, night by night, took a few turnips from his master's field. These were boiled by my mother for the children's supper. The bread we had to eat was meal bread of the coarsest kind, and of this we had not half enough. We children often used to ask this loving mother for another slice of bread, and she, with tears in her eyes, was compelled to say she had no more to give. . . .

" . . . It was in the year 1855 when I had my first experience of real distress. On my father's return home from work one night he was stopped by a policeman who searched his bag and took from it five turnips which he was taking home to make his children an evening meal. There was no bread in the house. His wife and children were waiting for him to come home, but he was not allowed to do so. He was arrested, taken before the magistrates next day, and committed to prison for fourteen days' hard labour, for the crime of attempting to feed his children ! The experience of that night I shall never forget. The next morning we were taken into the workhouse, where we were kept all the winter. Although only five years old, I was not allowed to be with my mother. On my father's release from prison he, of course, had also to come into the workhouse."

At the age of six little George began to work. By scaring crows from the field of a neighbouring farmer all day long,

for a seven-day week he earned 1s. He was up at sunrise and stayed in the field till after sunset. One day he fell asleep, and got a sound thrashing from his master with the loss of 2d. from his wage. Next he looked after the cows ; at harvest he followed the women binders and wove the straw bonds with which they tied up the hand-mown sheaves of corn ; for this he got 3d. a day. After harvest he went gleaning with his mother, and in the autumn once more he scared crows. At the age of seven he went to help his father who was then employed in making bricks. At eight years old he was earning 8s. a week by cleaning turnips, and lived in fear of being fiercely thrashed by the farm steward if he did not clean enough. At nine years old he was put in charge of horses, and in 1860, at ten, he was set to plough. In this work he took great delight, since he loved horses, and enjoyed the skilled labour involved.

In all these years the food of the family was poor. George breakfasted on bread soaked in boiling water, with a little piece of butter. His dinner was bread with a little bit of cheese and an apple or onion. Rarely did they taste meat ; an occasional 1½ lbs. of pork had to last the family of nine for a whole week. As the boy grew older, wild hares and rabbits tempted him ; small wonder that he sometimes snared and took them.

He had had no schooling whatsoever. He could neither read nor write. But by the time he was nineteen he had great knowledge of horses, could guide the plough with skill, could stack and thatch, and could also, as a subsidiary occupation, make bricks if occasion offered. Two events in 1872 transformed his life : he married, and his wife was able to teach him to read and write. About the same time the Primitive Methodists made him one of their lay preachers. He thus describes his difficulties in conducting his first religious service :

“Up to this time I could not read, I merely knew my letters, but I set myself to work. My dear wife came to my rescue and undertook to teach me to read. For the purposes of this first service she helped me to commit three hymns to memory and also the first chapter of the Gospel according to St. John. . . I might say that at my first service I was not quite sure that I held the book the right way up, as I was not quite certain of the figures. . . Having once learned to read, I became eager for knowledge. Until then I possessed only a Bible and hymn book and two spelling books. . . . My first purchase was Johnson's Dictionary, two volumes of 'The Lay Preacher,' which contained outlines of sermons, Hervey's 'Meditation among the Tombs,' and 'Contemplation of the Starry Heavens,' a Bible dictionary, and a History of Rome. . . . With my study of theology, I soon began to realize that the social conditions of the people were not as God intended they should be.”

During the years when George Edwards was growing up, Joseph Arch was travelling about England and Wales, earning good money as a highly skilled hedge-cutter, and often employing a gang of twenty-five to thirty men at the work. On Sundays he, too, preached in the pulpits of Wesleyan chapels as one of their lay preachers. Wherever he went he noted the condition of the labouring people. The freehold cottage which his father had left him at Barford in Warwickshire, gave him a certain independence, and procured him the Parliamentary vote. He read the papers, and was regarded by farmers as a dangerous man. About the time of George Edwards' marriage—1872—there came one night to Arch's cottage a group of labourers. They told their troubles and asked him to help them. In the darkness of a February night a thousand men had gathered by the flickering light of lanterns under an old chestnut tree in a village near by. They stood with gaunt and hungry faces waiting to hear Joseph Arch speak. He stood upon a stool to address them, and the meeting resolved to form a union of agricultural labourers, in order to improve their conditions. Thus began a new attempt on the part of the labourers to win, not by revolt but by co-operation, better homes, wages and conditions.

The union spread rapidly from Warwickshire into other

counties of the Midlands and of the east and south. Norfolk, George Edwards' native county, was one of those in which a branch was formed. The Trade Unions sent help in money, and many educated men and some newspapers encouraged the labourers. Joseph Arch's aim was not merely to raise wages, but to restore some of the old spirit of free village

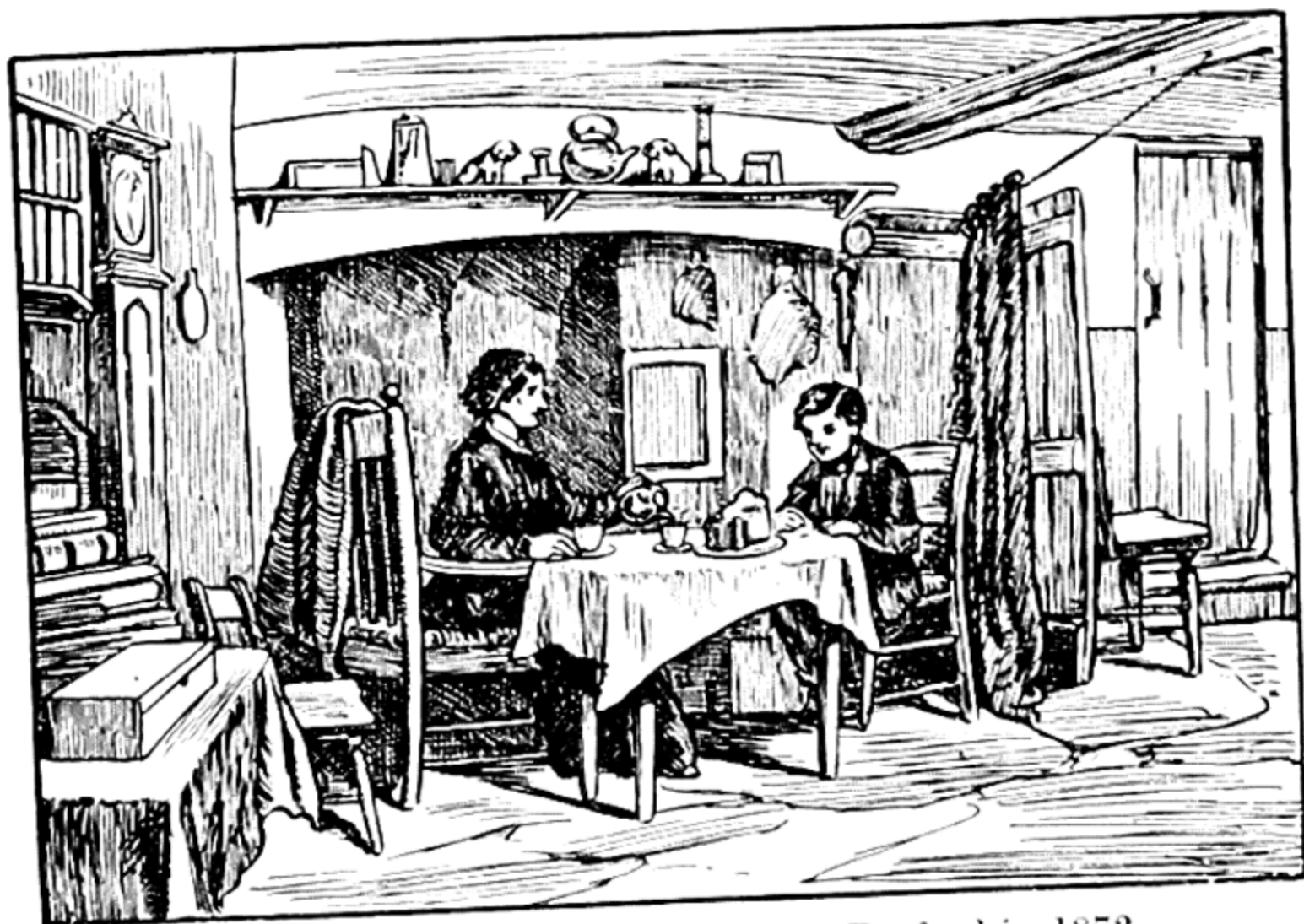


FIG. 5.—Joseph Arch's Cottage at Barford in 1872.

From "The Illustrated London News," April 1872.

"The farm labourers, hitherto looked upon as the lowermost stratum of the industrial classes, . . . have exhibited during the last month a capacity for union, moderated by self-restraint and sagacity, which has come upon the public with all the effect of a surprise."—*I. L. N.*

life by securing allotments and cow pastures for cottagers, by improving rural education, and by stopping the labour of women in the fields.

In the first year of its history, Joseph Arch's Union succeeded in raising wages. But, unhappily, many large farmers and a few great landowners wished to suppress the new Union.

In 1874 no less than 10,000 labourers were locked out of work. The men lost heart and gave way, and though wages had on the whole been raised between 1871 and 1875 by about 1s. 6d. a week, the whole idea of an Agricultural Labourers' Union appeared to many to be futile.

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Heath, F. G. . .	British Rural Life and Labour	<i>King.</i>
Fletcher, J. S. . .	Recollections of a Yorkshire Village	<i>Digby Long.</i>
Atkinson, J. C. . .	Forty Years in a Moorland Parish	
George Eliot . .	Middlemarch	
Hardy, Thomas . .	(1) Under the Greenwood Tree (2) Far from the Madding Crowd (3) The Woodlanders.	<i>Macmillan.</i>

CHAPTER II

VILLAGE LIFE AND FARMING (1875-1925)

I. THE DEPRESSION IN BRITISH AGRICULTURE (1875-1900)

THE period of prosperity in farming, which had enriched landlords and big farmers, and swept away many of the little peasants of the Midlands and south of England, came to an end about 1875. The prosperity had been due to the high prices which men with capital and knowledge had been able to secure for their farm products, while making their land yield every year more corn, meat and dairy produce than ever before.

*prices
of
wheat
fell
sharply
between
1876
and
1894*

The average price of a quarter of wheat from 1871 to 1875 had been 54s. 8d., but during the next five years it fell to 47s. 6d. It continued to fall until for the single year 1894 the average was 22s. 10d., and for 1895 it was 23s. 1d. Between 1876 and 1894 average wheat prices had fallen by 52 per cent. Similar though less violent falls took place between 1876 and 1894 in the prices of barley, oats, potatoes, wool, dairy produce and pork. This depression in prices brought ruin on many farmers, and forced the landlords heavily to reduce their rents. It is calculated that rents of farm land fell between 1878 and 1896 from about 27s. 6d. to 21s. 1d. an acre. Thus the fall in agricultural prices brought impoverishment to landlords. The depression was due to changes in world trade and agriculture, which had been slowly taking place, and the effects of which were now felt.

In the first place, new lands abroad had begun to grow large quantities of wheat; this was partly due to the construction of railways in foreign countries and in our own colonies and dominions. It chanced that the British harvests of 1875, 1876 and 1877, owing to wet springs and cold, bleak summers, were extremely bad; and 1879 was so very wet that it was remembered afterwards as the Black Year. Between 1874 and 1882 there were only two good crops. This gave an opportunity for the new countries to show us what they could do. The United Kingdom from 1875 to 1877 produced not much more than 9,000,000 quarters of wheat a year, and in 1879 we raised only 5,990,000 quarters compared with 13,700,000 in 1874; therefore corn began to pour in from abroad. Formerly France had been the foremost country to supply us with corn. From 1875 to 1900, however, the chief supplies came from the United States. At the close of the century the latter sent us more than all other countries put together. During the 19th century the great forests of the "Middle West" in the basin of the Mississippi and the Missouri had been largely cut down, and the Indians had been driven from their camping grounds. Virgin soil, so rich that for the time being it needed no manure, had been ploughed up and planted with corn, and great railways had crossed the continent to carry the harvest to the ports of the eastern states. Since 1850, moreover, the United States had been extended to the Pacific coast through the development of territory ceded by Great Britain and Mexico, and thus the great corn-lands of California had been opened up.* Next to the United States in order of their importance as suppliers of corn came India, Russia and Canada. The development of corn-growing in Canada was connected

* For an account of the American corn industry and trade read two novels by Frank Norris: (i) "*The Octopus*," 1901, (ii) "*The Pit*," 1903, described as *the Epic of the Wheat*.

with the purchase by the Dominion Government in 1869 of the rights over the vast prairie and forest-lands of the interior and west ; these rights had hitherto belonged to the Hudson Bay Company, who had kept the whole north-west as a mere preserve for fur-trappers, fur-traders and Indians. Some of these lands were said to have a surface soil of 16 feet of rich loam. The completion between 1880 and 1885 of the Canadian Pacific Railway across the continent, and also the construction of the Grand Trunk Railway and the Inter-colonial Railway, made it possible for settlers to send their corn to the ports ; by 1888 there were already about 12,000 miles of railway in Canada.

These countries became, thenceforward, the great sources of the world's wheat supplies. But in the last quarter of the 19th century, the virgin soil of two other vast regions in South America and Australia was temporarily used for corn-growing, in order to reclaim land and use it later for other farming purposes. Speaking of this period, Sir Daniel Hall said to the Royal Commission in 1919 :

“ You saw the wheat zone go sweeping across the Argentine. It was the means by which the new country was reclaimed. One saw the wheat belt in the same way used as the means of breaking in parts of dry land in Australia.”

Corn produced in this way was very often sold in the various markets of the world mainly to get rid of it, and without due regard for what it had cost to grow. Such a state of affairs could not last for many years, but while the prices were thus unnaturally lowered many English farmers were ruined.

The trade in these vast supplies of corn was made easier by the laying of the Atlantic submarine cable in 1866, for telegraphy enabled corn-dealers in the great trading centres of Europe and America instantly to know the prices at which corn was being sold in both continents, and thus to buy

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where corn was cheapest, and send it where it was most needed. Other submarine cables followed.

Not only in corn, however, but in wool, mutton, fruit and dairy produce, foreign farmers now began to compete with the British. So long as ocean transport had depended on wind and weather men could not bring the more perishable farm products overseas. Even wool deteriorates on a very lengthy voyage, and tinned meat is no substitute for fresh meat. But in 1869 the completion of the Suez Canal shortened by twenty-eight days the journey from Bombay to Liverpool, and considerably reduced the passage from Australia and New Zealand. Then, in the 'seventies, the rapid improvement in steamships led to their use wherever speed was of importance to the cargo.

Another important influence tending to lower farm prices was due to the invention in 1880 of artificial freezing.* The process was first applied to mutton, which could in consequence be brought fresh from the Antipodes. Freezing was afterwards applied to beef, butter, cheese, fruit and poultry, all of which could thenceforward be shipped to Europe from Australia.

The immense drop in prices resulting from these changes fell like a blight on the English farmer and his village. The series of wet springs and cold, bleak summers from 1875 to 1880 had already depressed him, and there seemed no chance of recovery. Those farmers who could afford it laid down good corn-land to grass; between 1881 and 1901 some two million acres of new pasture-land was thus created, for "high farming" no longer paid. On arable farms draining, manuring and even weeding were neglected. It was said in 1895 of Suffolk, that ancient corn-growing county, that the land was frequently very foul, being choked with charlock, weeds and thistles.

* See Chap. VII., pp 156 and 157.

This change from prosperity to indigence in our greatest and oldest occupation roused the concern of thoughtful people. As early as 1879, a Royal Commission was appointed to inquire into the causes of the agricultural depression. It reported in 1882, and as an outcome two leading commissioners were sent to the United States to investigate the corn trade and see whether the foreign competition was likely to be permanent. They hopefully reported that wheat grown in the western states could never be landed at Liverpool for less than 49s. 9½d. a quarter, since the lowest price on the fields of western America was 21s. 9½d. and the cost of transport alone was 28s. a quarter. But when prices reached their lowest point in 1894, another Royal Commission was appointed. It sat from 1895 to 1897, and by its reports much light is thrown on the general farming situation.

The counties which had suffered most were those which grew corn. Thus Norfolk, Suffolk, Essex, Kent, Hampshire, the East Riding of Yorkshire, Lincolnshire, and the Midland Counties of Nottinghamshire, Leicestershire, Warwickshire, Oxfordshire and Berkshire were in the worst case. The depression had gradually spread, however, to the pasture districts. In the Black Year 1879 no less than 3,000,000 sheep had died of rot, and by 1881 it was estimated that farmers had lost 5,000,000 in all, at a cost of £10,000,000. Nevertheless the counties of Northumberland, Cumberland, Westmorland and the districts of the Pennine slopes, compared with other parts of England, had suffered least, because on the grassy hillsides of the north, cattle-rearing and sheep-farming were the rule, and English meat, milk and butter, unlike English corn, still took the foremost place in the home markets.

The farmers of the corn-growing counties year by year had drawn on their savings at the bank, till they had spent all they had. Many went bankrupt and saw house and farm

sold up to pay creditors. Others threw up their farms and emigrated, or went to the towns; in Essex especially farm after farm stood empty and the land lay untilled. Farmers who were freeholders mortgaged their lands, or sold them altogether. In Norfolk the farmers, who in 1875 had held their heads high and lived in some style in their big, comfortable farmhouses, by 1895 looked harassed and depressed. All their time and energy were given to the struggle to make both ends meet. Except where the landlord was a wealthy man with other sources of income, the farm-buildings were neglected, and shabby barns, rickety fences and gates, were once again common. The farmers' sons and daughters determined to leave the country for the town.

The landlords also had suffered severely. Those who could afford it reduced the rents hoping to keep their tenants. Between 1875 and 1894 it was estimated that the total rental of all the landlords of the United Kingdom was decreased by nearly one thousand million pounds, or almost half the entire rental. In the Isle of Sheppey in Kent a landowner with 2,000 acres, who had formerly let it at £2 an acre, was willing in 1895 to take 7s. 6d. In Essex the rents of farms belonging to Guy's Hospital had fallen from 27s. 8d. an acre to 15s. On the Marquis of Bristol's estates in Suffolk, land which had been let at 9s. 6d. an acre in 1775, was let at only 9s. an acre in 1894, in spite of the immense capital spent on it during the previous 120 years. Other landlords, whose tenants had thrown up their farms, employed bailiffs to manage them; but it was found that the wages of the bailiff and the expenses of management far exceeded the income.

One class only was, in some respects, slightly better off during this period. The agricultural labourer had seen his wages raised in the previous period of high prices owing to the foundation of Labourers' Unions. He had learned that if farm wages were low he could leave the country for the town.

The Agricultural Unions had also assisted large numbers of labourers to emigrate. Now that prices were falling, therefore, the farmer could not reduce the labourer's wages as much as he had done before 1850. From 1876 to 1880 the average wage was 13s. 11d. a week, and though it sank a little, it never again fell below 13s. Even in the worst paid counties of the south-west, the average wage by 1880 had risen from 8s. to 10s. or even 13s. a week. These wages were still shockingly low, but the fall in prices made each shilling that he earned worth far more to the labourer. He could afford a little better food; he ate more bacon and more cheese, and when, towards the end of the 'eighties, frozen mutton began to appear in shops he sometimes ate fresh meat. From the little country towns the butcher's cart began to drive round the villages. Wheaten bread began to be generally eaten even in the hill villages of the north, where oatcake had been the main food. In most villages a little shop appeared in which cottagers bought all sorts of things unthought of by their fathers, such as an ounce or two of tobacco, or the cottons, needles, pins and other things which the old-time pedlar had sold.

Life in the cottage home of this period was better because women and little children less often worked in the fields. In some of the Midland counties women were still employed in potato-growing, but the custom was dying. After the establishment in 1870 of elementary schools all over the kingdom, a further Act was passed, called the Agricultural Children's Act; this forbade the employment in farming of any little child under eight, except on his father's land. Again in 1876, by another law, all children were compelled to go to school for a certain number of days in the year, and except at harvest-time no child under ten might work at husbandry. From this time forward, except in the holidays, few children were to be seen in the fields. At first the loss

of the earnings of wife and children increased the poverty of the labourer's home. In the long run it did good. As these children grew up, between 1876 and 1895, new thoughts came gradually into the cottages. The labourer and the labourer's wife could read a letter, and could write, however slowly and painfully. Sons and daughters who left the village for the great towns, or for the countries of the New World, were no longer completely lost to those who stayed behind. News from the outside world made village life seem less forlorn.

The founding of schools in the villages after 1870 might, if men had been wiser, have saved some of the best things in the old village life. For hundreds of years people who could not read had sung the ancient folk-songs. When work was done they had gathered on the green or by the village cross and danced the ancient dances. Railways and towns were killing these things. The new schools might have preserved them. The country children learned to read and write, but their education was too much like that of the towns. They did not for long years after this learn the old village songs or the dances which their fathers and grandfathers and great-grandfathers had handed down by memory. Slowly the ancient sayings and beliefs began to be forgotten. Old-time customs like that of May-day almost died out, together with other festivals which perhaps came down from our pagan forefathers of long ago. Many people at the present day are trying to revive these things. Folk-songs and dances are being taught to children in the schools, and even to grown-up people in many villages. May-day festivals are sometimes revived. Perhaps it is not yet too late to recall some of the things which were lost.

The houses in this period did not improve as they might. Though some good landlords began to build model cottages

on their estates, the general depression made house-building a risky adventure for the owner of agricultural land. The only person who could afford to build cottages was the man from the towns, who was making money all over England in the first part of this period by building cheap and ugly brick cottages, through the walls of which the wet oozed in winter. This "jerry-builder," as he was called, had it all his own way up to 1890, when the first great Act was passed to control housing. In this period, moreover, many labourers still lived in picturesque but tumble-down timber cottages, with tiny windows keeping out the air, and with moss-grown thatched roofs letting in the rain, and with no sanitary conveniences whatever. No wonder that year by year more people left the country for the town.

A glimmering of change in the labourers' outlook came with the beginning, between 1884 and 1894, of their power in politics. By the Franchise Act of 1884, male householders and lodgers in the country districts were granted the parliamentary vote, which had been given in 1867 to people in the boroughs. Therefore, at the General Election of 1885, parliamentary candidates came for the first time into the villages of England to ask labourers for their votes. Joseph Arch, the veteran hedge-cutter, became a candidate for Norfolk. He was returned to Parliament by the votes of the labourers, and rode triumphantly into King's Lynn in a donkey-cart to hear the poll declared. In 1889, too, County Councils were established throughout the country, and in 1892 the Norfolk labourer, George Edwards, became a candidate for the County Council and was very nearly elected. In 1894, by another Act, counties were subdivided into Urban and Rural Districts, each with an elected Council; and Rural Districts were again divided into Parishes, every parish with a population of 300 or more having its own Council. Those who were interested in the labourers hoped

that they would take a part in the work of these new councils. George Edwards says :

" I held meetings in every village where we had branches of the Union and explained the provisions of the Act. By the time the first meetings were held to elect the Parish Councils in many of our villages we had got our men ready and well posted up in the mode of procedure as to nominations and how to carry on. . . . At the meeting held for the election of Parish Councillors all the Labour members nominated were elected. We had nominated sufficient candidates to fill all the seats but one, and this was taken by Mr. Groom the school-master." *

In spite of these changes, however, the rural exodus, which had been going on ever since 1850, still continued, as the following table shows :

Year.	Number of males engaged in agriculture in England and Wales.	Percentage decrease during previous decade.	Percentage of the number engaged in 1851.
1851	1,453,124	—	100
1861	1,425,557	2 per cent.	98
1871	1,237,040	13 „	85
1881	1,128,355	8 „	77
1891	1,043,967	7 „	72
1901	923,644	11 „	63

In this period also the agricultural unions practically died out. Those who remained on the land saw the steady extension of grasslands and the cutting down of labour on the farms. Dreading unemployment, they were afraid to stir.

II. AGRICULTURAL PROGRESS (1900-1914)

In the opening years of the 20th century a new period of farm progress opened. The revival began with a rise of prices. Year by year from 1895 onwards, wheat, butter, bacon and other farm products cost more. Wheat, for example, which averaged 23s. 1d. a quarter in 1895, rose to

* George Edwards and his wife were both at this time elected to the Council of their Rural District.

26s. 11d. by 1900, to 29s. 8d. by 1905, to 31s. 8d. by 1910, and reached 34s. 11d. by 1914. This rise of prices was due to many causes.

In the first place the world since 1880 had seen a long period of peace, disturbed but not seriously broken by the South African War (1899-1902) and the Russo-Japanese War (1904-1905). In all the countries of the civilized world there had been a steady increase of population, and also a rise in the standard of living. Many countries formerly devoted to agriculture had built up vast manufactures; and thus some of the countries which formerly supplied us with corn had industrial populations which needed to be well fed. Thus the demand for the world's food supplies greatly increased. For example, meat is a food which is largely eaten by well-paid industrial workers; consequently meat rose in price. Sir Daniel Hall said to the Royal Commission on Agriculture in 1919:

"One of the characteristic features of the situation two or three years before the war was the way the great packing-houses were trying all over the world to get fresh supplies of meat. They were not able to meet the demand."

For the same reason within Britain itself the prices of butter, cheese, eggs, fruit and vegetables also rose; trade was good, and our working people were well employed and well paid.

A second influence, specially affecting wheat prices, was that the high tide of cheap corn which had flooded the world's markets in the late 19th century was at last beginning to ebb. In the United States the earlier settlers had recklessly cropped the land without using fertilizers. American farmers now found that the soil was partially exhausted, and they were obliged to use old-world methods. They began to apply expensive manures and therefore could not produce such cheap wheat. In 1919 it was computed that the

average American wheat yield was only 14 bushels per acre, whereas the English average was 32 bushels; the English farmer when selling in English markets, therefore, was better able than he had been before to compete with the American prices. Meanwhile in countries like the Argentine and parts of Australia, where cheap wheat had been produced merely to break up virgin soil, fruit-growing and other types of farming began to replace corn production.

At this time of rising prices British farmers showed a new business acuteness. During the great depression the older and slower farmers had failed in large numbers. Many of those who survived had taken on land at new leases during the period of low prices, and now held their farms at low rents. In many cases they had taken on additional farms. By keeping their lands under grass, and employing as little labour as possible, they made considerable profits. This type of farming is bad for the country as a whole, because it does not get out of the land its full value, and also because it does not give work and wages to a sufficient number of men. But it pays the farmer very well because his expenses are low, and his net profits high.

By the year 1910 it was clear to farmers that the tide had turned in their affairs. In the 'nineties, just before Michaelmas Day, pages of advertisements of farms to let had filled the country newspapers. By 1910 there were so many applicants for farms that, though rents were rising, landlords' agents could pick and choose amongst possible tenants. In 1912 it was said by Sir Daniel Hall:

"Rents have definitely risen with the demand for land that cannot be satisfied, and in all parts of the country men are obtaining very large returns indeed on the capital they embarked in the business. Of course, every farmer has not been making money; bad business habits and slipshod management are far too common, and nothing is more surprising than the way bad farming exists alongside good. . . . But to a man who takes the trouble to learn, and attends to his business, farming now offers every prospect of a good return on his capital."

As farming began to pay once more, the ranks of the business farmers were reinforced by new men who came into agriculture from industrial life. Such men were not content "to look over the hedge" and see what a neighbour was doing. They were ready to inquire into and understand the reasons for fresh ways. New ideas in agriculture have always been slow in reaching farmers. But in 1889 there was founded the Board of Agriculture and Fisheries, now the Ministry of Agriculture. Part of its work is to collect statistics and conduct investigations in connection with agriculture. It issues a monthly journal and a weekly market report; it publishes leaflets on questions vital to farmers. In the early years of the 20th century its work began to be known. There were also in existence no less than twenty agricultural colleges and other institutions, most of them founded after 1889, where farmers could get trained for their work. Many of them were connected with the County Councils, which from 1889 onwards received Government grants for agricultural education. In this period also the work of Sir John Lawes and Sir J. H. Gilbert at the Rothamsted Experimental Station began to bear fruit. After fifty-seven years of unbroken experiments in the growing of wheat, barley and grasses, and in the rearing of live-stock, the Station had become world famous. At his death in 1900 Sir John Lawes left it endowed with £100,000 as a permanent institution for the advancement of scientific farming. It had become a centre for the diffusion of enlightened ideas in rural science.

While, however, farming thus revived between 1900 and 1914, the agricultural labourers profited but little. Their steady departure to the industrial districts became an object of general concern. The recruiting for the South African War had shown how very poor was the physique of people bred in towns, and in 1906 the House of Commons appointed a Select Committee to report on the causes of the decline

since 1881 of the agricultural population of Great Britain. Skilled observers began to investigate conditions in individual villages; they wished to see how far the food, clothing, housing and other social circumstances of village people compared with those of the desperately poor slum dwellers whose life in London had been described in the 'nineties of last century by Charles Booth, and in York, in 1901, by Seebohm Rowntree. The facts accumulated between 1904 and 1913 all pointed to the conclusion that a considerable proportion of the rural working-class was living under conditions which made it impossible even for the wage-earners to keep in physical health.

In the first place, wages were not keeping pace with the rise in the price of bread, a very fair index of the general rise in the cost of living. This the following table shows :

AVERAGE WAGES OF FARM LABOURERS (EXCLUDING COWMEN AND SHEPHERDS) IN ENGLAND AND WALES COMPARED WITH PRICES, 1902-1914.

Year.	Price of wheat per quarter.	Average wages (including "Extras and Allowances") at 1s. 3d.*
	s. d.	s. d.
1902	28 1	17 5
1907	30 7	17 6
1914	34 11	18 0

Even lower than these average wages were the wage-rates for individual counties. In Oxfordshire in 1907 the county average was only 14s. 11d. a week; and Norfolk labourers at 15s. 4d. and Suffolk men at 15s. 9d. were not much better

* Before the war, the weekly cash wages of farm labourers were usually supplemented by "extras and allowances," such as milk, potatoes, bacon, beer, or cheap cottages. In 1914 these were valued at an average of 1s. 3d. a week, and this sum is included in the amounts given in the last column.

off. Cases were known of individuals who earned only 10s. a week.

In considering what it meant to hard-working and thrifty men and women to bring up a family on such wages as these, the skilled investigators of the period adopted as a basis for their calculations the cost of a diet poorer than that of any English workhouse, and including "no butcher's meat, and only a little bacon, scarcely any tea, and no butter or eggs." Even in the early years of the 20th century such a diet cost 3s. a week for a man or woman, and 2s. 3d. a week for each child. The following table shows that, allowing nothing for such luxuries as tobacco or beer, and nothing whatever for emergencies, a father, mother and family of three children could barely subsist on 20s. 6d. a week.

WEEKLY SUBSISTENCE TABLE FOR A FAMILY OF FIVE.

				s.	d.
Food	..	..	..	13	9
Fuel	..	..	..	1	4
Rent	..	..	..	2	0
Clothing	..	..	..	2	3
Insurance	..	..	..		4
Sundries	..	..	..		10
Total ..				20	6

Those whose wages compared with the size of their families did not enable them to reach this standard were said to be in "primary poverty." In a Bedfordshire village in 1904 it was found that 41 per cent. of the labourers were below this poverty line. In 1913 Mr. Seebohm Rowntree, who had conducted a wide investigation during the six preceding years, found that, with the exception of five counties—Northumberland, Durham, Westmorland, Lancashire and Derbyshire—the average earnings of farm labourers throughout England and Wales brought them below this line.

Clothing was a great problem. For example, of an

Oxfordshire mother with a husband and four children who lived on 10s. a week it was said :

“ She trusts to charity for the children's clothes, and makes and remakes anything given to her with great skill. . . . She herself has never had a new dress since her marriage, though she has been married 13 years.”

Of another family with man and wife and five children on a wage of 12s. it was written :

“ The man's shoes this year have cost 16s. Clothes for the wife and children are given by the charitable, and altered to serve. But the man's clothes cannot be got that way ; they are bought on the instalment system, and either the food suffers, or there is increased debt.”

The houses of the farm labourers were still, as a rule, very poor and inadequate, having rarely more than two small bedrooms however large the family. The men who lived in conditions like these worked, as a rule, from eleven to twelve hours a day in the summer, and the full span of daylight in the winter. Sunday work was general, and the men rarely got a holiday of any kind whatsoever. The Small Holdings Act of 1907 had been passed in order to offer allotments of less than an acre to labourers, and also to give them a prospect of winning independence by renting small holdings up to 50 acres in extent. But for men with no leisure, and no money to put by, this Act proved a delusion.

Conditions of life like this, in face of rising prosperity amongst farmers, roused once again the spirit of the labourers. After the failure of their Unions in 1874, the independence of the villagers appeared to be crushed. In 1900 not a single Agricultural Labourers' Union survived. The new Parish Councils had failed to arouse interest. “ They are cowed,” said a writer of 1903 in the *Contemporary Review*, speaking of the labourers, “ pride is dead in their souls.” In 1906, however, in the county of Norfolk, letters began to pour through the post addressed to George Edwards, the farm-worker who

had led the Norfolk branch of the Union in 1872 and again in 1889 ; they begged him to found a new Union. Thus arose, in 1906, the " Eastern Counties Agricultural Labourers' and Small Holders' Union," which was refounded in 1912 as the " National Agricultural Labourers' Union." During the eight years before the War it spread steadily from Norfolk through a large number of the English counties. In 1912, moreover, the " Workers' Union," which had hitherto devoted itself to uniting other types of unskilled labour, began to send organizers into the villages of Yorkshire and the Midland counties, and to gain members from amongst the farm workers. In 1913 an important strike of the members of the N.A.L.U. in south-west Lancashire took place. The men asked for a Saturday half-holiday, a minimum wage of 24s., and the recognition of their Union. Other Trade Unions gave them aid, and for the first time in history they won by collective bargaining a reduction of their hours of work, together with a general rise of agricultural wages in their district amounting to 2s. a week. In 1914 the King recognized the N.A.L.U. on his own estates at Sandringham and granted the labourers employed by him the Saturday half-holiday. There were by this time 10,000 members in the N.A.L.U. and 5,000 agricultural members in the Workers' Union. Suddenly the War came and transformed the situation.

III. THE GREAT WAR AND ITS AFTER EFFECTS (1914-1925)

The War brought the period of agricultural revival to a sudden and artificial climax. Once again, as in the days of Napoleon, prices rose. Once again farmers prospered. Once again, after war ended, they suffered heavily, so that to-day we are back in the trough of a wave. But the War left certain good legacies : it united the farmers, hitherto so slow

to co-operate, and it lifted the agricultural labourer to a position of new dignity. It led also to the revival of the social side of village life.

Farming during the War and the two years which followed the Armistice, was dominated by the immense rise of prices. This is illustrated by the following table :

WHOLESALE PRICES OF FARM PRODUCE, 1914-1920.*

Date.	Wheat per quarter.	Potatoes per ton.	Best beef per 8 lbs.	Best mutton per 8 lbs.	Pork per 8 lbs.
	s. d.	s. d.	s. d.	s. d.	s. d.
1914 Jan.	31 0	70 0	5 6	7 4	4 4
1915 „	43 0	77 6	6 2	6 8	4 11
1916 „	53 11	100 0	6 6	7 6	6 10
1917 „	74 10	240 0	10 0	11 4	7 4
April	80 3	240 0	10 4	11 4	8 1
1918 „	71 2	140 0	5 2½	14 0	9 6
July	74 4	260 0	5 3	9 6	10 8
1919 Jan.	72 3	198 0	5 3	9 6	12 0
July	73 4	165 0	5 8½	9 6	10 1
1920 Jan.	72 6	220 0	5 8½	10 0	10 7
July	78 9	237 6	9 4	10 0	10 6

This table shows how prices rose steadily up to April, 1917, then dropped slightly, and then rose again, reaching their very highest point two years after the War ended. In October, 1920, the price of a quarter of wheat was actually 90s. 5d.

Many causes produced this rise. Ships which had brought corn were needed to carry soldiers, and, moreover, many merchant vessels were torpedoed or blown up by mines ; this shortage of shipping reduced supplies. Food in vast quantities was needed for the hard-worked fighting men and munition workers ; this increased the demand. There were

* These figures are taken from "Prices and Wages in the United Kingdom, 1914-1920," by Professor A. L. Bowley. For examples of other rises and prices at this time, see Chap. IV., p. 99.

other and deeper causes at work also, connected with a change in the value of money ; these cannot here be discussed.

Encouraged by the rise in wheat prices, already by the year 1916 farmers in many places had begun to plough up their pastures in order to grow crops, just as they had done in the days of Napoleon. By the summer of 1917, prices had risen so high that the Government founded the Ministry of Food. Its policy was to limit the amount of meat, butter and cheese which each person might eat, and also to secure the largest possible supplies of these things. Every one was given a " food card " and no one might eat too much. Thus the price of beef fell considerably between April, 1917, and April, 1918, as the table shows. At the same time, in order to encourage farmers to grow wheat and oats, the Corn Production Act of 1917 was passed. It laid down that for at least six years the farmer was to receive a fair price for his wheat and oats ; the labourer too was to receive a reasonable living wage. Every year the Government was to determine, by inquiring into the cost of producing the corn, what should be the " guaranteed price " for the year. No farmer was to receive less. If in any given year the average price of a quarter of wheat or oats in the home markets should fall below this guaranteed price for the year, the Government was to pay the difference to the farmer.* Since prices continued to rise, no such payment was ever made. For example, in 1917 the guaranteed price for wheat was 60s. a quarter, but the average price was higher ; in 1920 the guaranteed price was 68s., but still the average price soared above it. The promise to pay, however, gave confidence to farmers.

By this Act also the Ministry of Agriculture was empowered to see that farmers cultivated their land properly.

* It was reckoned that an acre will produce 4 quarters, and therefore the Government undertook to pay the farmer, for every acre of his land under wheat or oats, four times the difference between the average price and the guaranteed price of a quarter.

In order to secure this, County Agricultural Committees were appointed, and under their orders, between 1918 and 1920, a considerable amount of pasture-land not always suited for agriculture was ploughed up. To secure a minimum living wage for labourers, a Central Agricultural Wages Board was also set up, and under this Board, in each county there was appointed a Wages Committee, which had to work out the details.

At first the effect on farming of all these influences appeared to be good. The prices which the farmers received for their produce kept well ahead of their increased expenses. Farmers were able to invest in war loan and improve their style of living; in every country town their new motor cars crowded the streets on a market-day. As leases fell in, however, rents inevitably rose; the landlords, like other people, had heavy taxes to pay, and high prices to give for everything they used. Thus on a farm at Holbeach in Lincolnshire a farmer who had leased his land in 1894 for fourteen years at £420 per annum, and had renewed the lease in 1908 for seven years at £560, was only allowed in 1915 to take it on a yearly tenancy at £660. At Michaelmas in 1918 he received notice to quit, and the farm was let for £880 a year. It was stated before the Royal Commission on Agriculture in 1919, as an example of the rise of rents, that in the fen district of Lincolnshire rentals and sales had both shown an increase varying from 30 per cent. to 100 per cent of their value before the War.

Owing to the fact that they could get these high prices by selling land to the farmers, many big landlords began at this time to split up their great estates and put them on the market in separate lots. Many farmers found themselves obliged either to buy their farms or to quit them. Whereas in 1919 there were 16,080 farmers * in England and Wales

* *The figures are those for holdings of 50 acres or more.*

who owned their own land, in 1921 there were no less than 26,737. Thus arose a marked increase of the class that our forefathers called Yeomen. The change meant, however, that the farmer had to draw upon his savings which might otherwise have been safely invested in War Loan, or in Victory Bonds.

The farmers, in spite of their prosperity, had other handicaps. During the War many of the best labourers went to the Front. Farming is a skilled occupation, and though the women and schoolboys and other volunteers did their best on the land, it deteriorated. Too much cropping also harmed it. Another handicap was the rise in the prices of everything the farmer needed: by 1919 seed had risen by 150 per cent., manure, fuel and fodder by 100 per cent., and farm implements by 120 per cent. Things were not so well with the farmer as they looked.

As for the agricultural labourers, when war broke out they volunteered in large numbers for the army and navy; it is estimated that up to July, 1915, as many as 243,000 of them enlisted, and in 1919 the Government stated that 400,000 farm-workers had served. When the War ended those who returned brought back to the villages a new outlook. They had seen life from a fresh angle. Gradually, as peace was restored, the names of those who did not return appeared on every village monument in one roll of honour with those sons of landowners, farmers, doctors and parsons who had fought and fallen with them. Thus in every village rose a reminder of the common humanity of all men.

Those who remained behind during the War were also changed by new experiences. Their work as food producers was praised and valued by every one, since the country feared a shortage of food. As time went on, girls of the middle class, boys from the big schools and professional men rejected from the fighting services came to help on the land; the labourers were the skilled men who could teach these new-

comers their business. By 1917, moreover, camps full of soldiers, factories packed with munition workers, and aerodromes thronged with airmen were dotted all over the quiet English countryside. The skilled workers in these places rubbed shoulders with the agricultural labourers and gave them new ideas.

In spite of the fact that farm-workers were so much needed, however, their wages throughout the duration of the War rose far more slowly than did the cost of food. Only in the spring of 1919, when the War was over and the ex-servicemen were slowly coming back, did the agricultural labourers really receive a higher wage than in 1914. This the following table shows :

AVERAGE WEEKLY WAGE (WITH ALLOWANCES) OF GENERAL AGRICULTURAL LABOURERS IN ENGLAND AND WALES IN RELATION TO FOOD PRICES.

Date.	Average weekly wage with allowances.	Percentage rise of wages.	Percentage rise of retail food prices.
	<i>s. d.</i>		
1914* July	16 10	—	—
1915 April	18 10	12 per cent.	24 per cent.
1917 Jan.	23 6	40 „	87 „
1918 Spring	Minimum wages introduced under Corn Production Act		
1918 Aug.	31 9	89 per cent.	118 per cent.
1919 May	38 0	126 „	107 „
1920 „	42 9	154 „	146 „
1920 Aug.	46 9	177 „	158 „

This steady decline in their standard of living forced the labourers to have recourse to their Unions at a time when every one else was absorbed in the War. Throughout 1915, 1916 and the early months of 1917, the Agricultural Labourers'

* The average for the whole year 1914 is estimated at 18s. 0d. by the Ministry of Agriculture. But July, 1914, is the month before the War began, and is therefore chosen.

Union and the Workers' Union were both active in different parts of the country. At length, when by the Corn Production Act of 1917 the principle was recognized of a compulsory Minimum Wage for farm-workers, the two Unions were given by the Government an important part to play. In the first place, on the Central Wages Board there sat sixteen employers and sixteen representatives of the labourers, side by side with seven people nominated by the Government. Of the sixteen labourers, six were nominated by the National Agricultural Labourers' Union, and two by the Workers' Union. Again, on the County Wages Committees, whose duty it was to determine for the farm-workers of their own counties the minimum wage scales, there were nine farmers and nine labourers, together with five persons appointed by Government. When these County Wages Committees met, the nine farmers sat on one side of the table and the nine labourers on the other, while the five "appointed members" sat near the Chairman. Labourers and farmers alike were paid 10s. a day for their work on the committees, together with travelling expenses. This brought them together in common discussion. Farmers gained a new respect for labourers, and the latter had some chance of understanding the farmers' difficulties. As prices continued to rise, it was obvious that the 25s. minimum wage laid down by the Act of 1917 was insufficient. In county after county it was increased, and by January, 1920, the average farm wage for England and Wales was 46s. 9d. The very lowest county average was 46s., and thus the worst-paid labourers had profited most.

Not only were wages raised, but hours of work were gradually limited by the County Committees. In 1919, after the War ended, they were reduced to 50 hours in summer and 48 in winter, and thus the ordinary labourer * usually secured

* *The skilled labourers in charge of stock and of horses did not get so much free time but had higher pay.*

the Saturday half-holiday and a free Sunday. Overtime was paid for at special rates.

In consequence of all these developments, men crowded during these years into the two Unions. In 1920 the Workers'



FIG. 6.—Sedgeworkers at a Women's Institute.

From "The World's Work," June 1922.

Union had 150,000 rural members, and the National Agricultural Labourers' Union had a membership of 200,000. In addition to this, many farm-workers had joined other labourers' unions, and it was estimated that more than half the agricultural labourers of the kingdom were members of some Union

in 1920. Thus, in manifold ways, the classes in the farming community were educated and drawn together. Foundations were laid for the future to build on.

During the War, also, there had arisen other movements for the benefit of village life. In 1915, at Llanfair in North Wales and at Wallisdoun in Dorset, the first two Women's Institutes in this country were founded. By 1917 there were 137 villages which had them; in June, 1924, there were 3,100. Each Institute is a society to which every woman, rich



FIG. 7.—Class in Chair-mending at a Women's Institute.
From "The World's Work," June 1922.

or poor, in a village may belong on equal terms. They were started to help the production and preservation of food; they have become a source of new village life. Month by month the members meet to have tea and exchange views. Lectures are given on history, literature, architecture; classes take place in chair-mending, glove-making, dressmaking, mat-making, cookery and other crafts. Rural libraries are started, or boxes of books obtained from some central library. The members elect their own committee, and send delegates to

the annual meetings of the National Federation of Women's Institutes, which was founded in 1917. Many Institutes are the means of reviving the old folk-songs and village dances which the 19th century nearly killed. Thus, out of the food-needs of the War a great revival of country interests has grown.

Not unlike the Women's Institutes in aim are the Village Clubs for men and women, which also began under war conditions. They, too, attempt to revive the life of the old village. The Village Halls, some of them built in memory of the fallen, others remade from old army huts, are centres for classes, libraries, games and the revival of a common life.*

By the year 1920, the prosperity of agriculture seemed to be assured. Farming is, however, in modern days an occupation linked by world-wide ties. The British farmer who ploughs and sows or rears his stock in some remote village, may see his hopes destroyed not merely by the weather, that ancient adversary, but by unseen forces at work all over the world. At the end of 1920 the farmers who had sown their crops with costly seeds and fertilizers in expectation of continued high prices, saw an ominous fall begin. By the autumn of 1921 a drop as great as that which followed the Napoleonic Wars had taken place, as the following table shows :

THE SLUMP IN PRICES OF 1920-1921.

Year.	Wheat (per quarter).	Barley (per quarter).	Oats (per quarter).	Best cattle (per stone).	Best mutton (per stone).	Bacon (per stone).
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1920 (Autumn)	90 3	91 8	52 3	22 11	2 2	26 10
1921 (Autumn)	44 3	49 0	25 11	15 4	1 2	12 8

* Most village clubs are affiliated to the central "Village Club Association," which is spreading the movement in our villages.

The Corn Production Act, which had been renewed in 1920, should have saved farmers from ruin. But in the summer of 1921 it was repealed, and thus the bounty which should have been paid to every farmer who grew wheat and oats when the average price fell below the guaranteed price, was no longer to be had. Throughout 1922 and 1923 the decline continued. Early in 1924 it became more gradual. At the end of 1924, and early in 1925, wheat prices began somewhat to rise, and have fluctuated since.

This fall in prices was not limited to Great Britain ; it was world-wide. It seriously affected farmers, manufacturers and merchants in the United States, Canada, Australia, New Zealand and elsewhere. It was due, in all probability, to a great effort made by the Banks of Great Britain and America to "deflate," or restore money to something like its value before the War.* In Great Britain this deflation or rise in the value of money took place just when the world's shipping had recovered, and when foreign supplies were coming in to compete with our own. Our agriculture suffered a stunning blow. The farmers lost so heavily on their crops and stock in the markets that they had to draw capital out of the bank. Next they reduced their numbers of farm-hands ; and many let their arable lands revert to rough pasture. Many farmers not quick enough to take measures like this went bankrupt, as the following figures show :

INSOLVENCIES AMONG FARMERS IN ENGLAND AND WALES.

Year.	Number.
1920	44
1921	285
1922	404
1923	482
1924	369

* *Most of the world's "money" at the present day does not consist*
S. VII. E

The labourers, too, were very hard hit. By the autumn of 1923 there were 97,000 fewer land-workers than there had been in 1920. As prices fell it was natural for wages to be lowered to some extent. But with the repeal in 1920 of the Corn Production Act, the Agricultural Wages Board and the County Wages Committees had also been swept away. Therefore wages sank faster than prices, and hours of work were increased. All over England the membership of the agricultural labourers' Unions fell. The National Agricultural Union's membership dropped by tens of thousands, for men thought they could no longer afford to belong. Some fatal influence seemed ever to be at work dooming English farming to depression, and English labourers to exile from the land.

Happily one false step was soon retrieved. In 1924, by the Agricultural Wages Act, the minimum wage for farm-labourers was restored. The Central Agricultural Wages Board and the County Wages Committees were once again set going. Hours of work were limited; the weekly half-holiday and the free Sunday were secured; and wages, though still low, rose within the three first months of 1925 all over England and Wales by an average of 3s. a week.

Men of all classes now care for rural life. Thomas Hardy the great novelist, Richard Jefferies and W. H. Hudson the nature-lovers, have made village life real to those who love books. The walker and the cyclist have explored the countryside; the motor-bus now takes men out. The revival of the old folk-songs and folk-dances has roused in many people ancient feelings which we all inherit from our village forefathers. We have learned the truth that on the well-being of its country folk much of the health of a nation

of coins or paper. It consists of Credit, by which is understood ability to borrow or lend. The banks in 1920 restricted every one's credit, because they deliberately raised their rate of interest and made it more difficult to borrow. They thus raised the value of money and thereby lowered prices.

depends. With the development of science and machinery it is believed that the farm-lands of Britain can double their output. With the revival of road transport and the growth of co-operative marketing, farmers should be able profitably to sell their goods. With the reform of house-building, and the improvement of village schools, workers should be able to live in contentment in the English countryside.

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CHAPTER III

ENGLISH INDUSTRIES AND THE LIFE OF THE WORKER (1830-1875)

IN the period from 1830 to 1875, English workers were rapidly passing into a new mode of life. All swift transition is liable to produce suffering, and hence the years from 1830 to about 1850 were a time of misery. Carlyle wrote, in 1843 :

“Descend where you will into the lower class, in town or country, by what avenue you will, by Factory inquiries, Agricultural inquiries, by Revenue Returns, by Mining Labour Commissions, by opening your own eyes and looking, the same sorrowful result discloses itself; you have to admit that the working body of this rich English nation has sunk or is sinking fast into a state, to which . . . there was literally never any parallel.”

Friedrich Engels, a German economist, wrote in 1844, after a sojourn of nearly two years in Lancashire :

“Everywhere barbarous indifference, hard egotism, on the one hand, and, on the other, nameless misery.”

This misery was partly due to the evil state of the towns, partly to high prices, partly to a bad Poor Law. But in great measure it was caused by a twofold development in industrial life. First, industry after industry was changing from a handicraft to a machine trade, and many men and women were thrown out of work during the transition. Secondly, the old customary methods of determining wages and conditions of life were lost, and there was at first no State guidance for masters and men. Yet out of this chaos, better things came. By 1875 the working class had gained in wages,

and modern industrial life was established. It is this growth and change that this chapter will trace.

I. INDUSTRIES FROM 1830 TO 1850

English industries from 1830 to 1850 can be arranged in four groups. There were, first, the trades that were still mainly handicrafts ; second, those in which the workers used their own or hired machines ; third, the new factory industries ; and lastly, the coal and iron works.

The old handicrafts still formed, in 1830, a large group. In it were tailoring, boot-making, glove-making, strawplait, nail and needle making. In 1845 Dodd described the glove trade that radiated into the country round Worcester :

“The manufacture of gloves is one of those few which are so far removed from the class of factory operations, as to afford employment to country people . . . in their own homes. . . . Machinery has done much, but it has not yet made gloves. . . . So far as the mass of glove wearers are concerned, every seam of every glove has been sewn by hand. . . . The dressed skins are cut out in the workshop of the master . . . with great rapidity, and bound up in small parcels, each parcel containing the necessary pieces for a dozen pairs of gloves. If the operative glovers live in or near Worcester, they go to the house of the manufacturer, receive the leather in small parcels, and carry it home to work up into gloves. But if they live 10 or 12 miles out . . . the manufacturer sends an agent once a week, who opens a temporary warehouse at a public-house or some other hired room, and there meets all the humble workpeople who live within a few miles on every side. . . . Following one of the operatives to her home, we shall see that her only working implement, besides needles and thread or silk, is a clasp, which she holds between the feet and knees, and which acts as a vice to retain the glove in a fixed position. Under many a humble roof may be seen a mother and her daughters thus employed. It is, under the average state of trade, a close day's work which will yield a shilling to the workwoman.”

The nailmakers of Bromwich were thus described :

“The nailors inhabit certain districts scattered . . . over a considerable space, and work together in parties of two, three or even whole families of both sexes, in little smithies, fitted up with bellows, a hearth, a small anvil, and a few other simply-formed tools.”

The second group of industries were those carried on with small machines by workmen in their own cottages, or in

hired "standings." Such were the Coventry ribbon manufactures, Nottingham and Leicester hosiery and lace-making, and Derby silk-spinning. In Coventry, by 1830, most ribbon weavers used the small steam loom instead of the hand loom. It was costly, and when, after 1829, French ribbons became fashionable, and bad times came, the weavers could not afford new, improved machines.* The ribbon weavers were rivalled, too, by new English ribbon factories. Thus, in 1830, a weaver could hardly earn 12s. a week.

The framework hosiery knitters of Nottingham were even worse off. The following account shows the state of some good workers at Arnold, near Nottingham, in 1833 :

	s.	d.
1. E. Haywood, journeyman, 53 years works 15 hrs. a day, produces 8 pairs a week at 16d. a pair . . .	10	8
He pays necessary deductions . . . frame rent 1s., seaming 1s. 1½d., needles 4d., standing 3d., coals 3d., taking in to the bagman 4d., candles 6d. . .	3	9½
He pays lodgings 8d., cooking 4d., washing 4½d. There is therefore left for food and raiment per week . .	5	6
2. The following is a family, five of whom work in the frame about 15 hrs. a day, five days and a half in the week :		
Joseph Grainger the elder Usual deductions . .	9	3
Richard Grainger, his son, 22 years old Usual deductions . .	3	6
Joseph Grainger, another son, 16 years old Usual deductions . .	7	5½
Anne, a daughter Usual deductions . .	3	0½
Mary, another daughter, 11 years old Usual deductions . .	8	8½
Left for house rent, soap, food and raiment for this family, £1 0s. 2d.	3	4
	5	10
	2	5
	3	4½
	2	2

3) The new factory industries, which formed the third group, were principally confined to the cotton industry of Lancashire, which was wholly carried on in mills, and the woollen and worsted industries of the West Riding of Yorkshire, in which the spinning and worsted-carding and some of the weaving

* In 1830 only 650 out of over 4,000 looms were fitted with the Jacquard pattern-setting apparatus, which saved days of work.

were under the factory system, though much handweaving and handcombing still survived. Actually, there were far fewer mills than there are to-day, but the increase between 1825 and 1845 was startling. A south-countryman, viewing Bradford in 1845, wrote :

" This is one of the many towns which, when approached just after dusk on a winter's evening, present that curious illumination resulting from the countless windows of large factories. Five, six, seven storeys of such windows are to be seen, extending to great width, and each throwing out its glare from the gaslights within the long rooms. Those who by residing in an agricultural county or even in London, are not accustomed to such a sight, can scarcely form an idea of the singular effect."

Seen from without, the mill stood for the wonderful new wealth of the time. Seen from within, it was often a most unpleasant place. Before 1833 the mill was regulated only by the master and his overlookers, and as a rule no one went in except those who had business with the counting-house. Most mills were small and dark, and sometimes had neither lavatories nor conveniences of any kind. Dirt accumulated everywhere. The machines that thudded away were small and of low power,* but year by year the owners were scrapping the old ones ; each new machine worked faster than before. In the cardroom of a cotton mill the windows were kept shut, and the air was thick with cotton dust. In the spinning-room stood water-frames, thus described :

" They spin all wet ; they are heated by steam, and the places where the girls are minding them are all full of steam. . . . The frames stand so close, in some places, and the water flies from one frame to another, so that they are wet through to the skin. In winter time the clothes of those who have a long way to go will be frozen to their backs . . . before they get home."

The heat in the fine spinning-rooms was very great ; the temperature was said to average 83 degrees, but in some mills the heat was regulated by the men, and no one knew what it was. And in all the rooms wheels whirred, and bands

* In 1840 a mill with 100 horse-power was accounted large.

revolved, unfenced, and ready to catch loose hair, or a flapping sleeve, and tear and crush.

The workers in the mills came crowding in at the gates at 5 or 6 o'clock in the morning. Many were little children, who, at the present day, would be going to school. About 1833, in forty-three Manchester mills the ages of the "hands" were as follows :

Years of Age.	Males.	Females.
9-10	498	290
10-12	819	538
12-14	1021	761
14-16	853	797
16-18	708	1068
18-21	758	1582
21 and above	3632	3910

Before 1834, many children of 6, 7, and 8 years were at work ; in fact, 7 was about the usual age to begin. The table shows that of about 17,000 workers, nearly 4000 were under 14 ; of the rest, over 7000 were women, mostly quite young, for after 25, for one reason or other, most of them left mill life. Of the men, the spinners in the cotton mills and the slubbers in the woollen industry, were mostly between 20 and 30, but few were still doing factory work at 35. Thus the bulk of the work was done by children under 16 years of age, and by young women.

The hours of work were usually between twelve and thirteen a day in ordinary times, beginning at 6 o'clock in the morning. Children, still half asleep, stumbled along hastily, to avoid the strap for being late. They put their food aside, on a window-sill or ledge, or on the end of the frames, and the long day began. The youngest children were the scavengers. Their work was "to go under the machine, while it is going, in all attitudes, and in a most deplorable dress," as a cotton operative said. Older children became "pieceners." Each

'spinner, a young man or woman, at work at the spinning-frame, was helped by two little pieceners, who trotted to and fro with the sliding carriage of the machine, watching the twisting threads, and swiftly rolling together and joining any ends that broke. These children were on their feet all day long. It was estimated that they covered some twenty miles



FIG. 8.—A Manchester Operative in 1842.

From "The Illustrated London News."

a day. Moreover, the threads were apt to skin the fingers. Other children were "doffers," who took full bobbins off the frames, put on empty ones, and carried the bobbins away. The doffers, too, were always on their feet, "There are so many frames, and they run so quick," said one. In the carding-room, and in the roving room, there were likewise little children helping the grown workers. As they grew older, the mill children were promoted to be machine-minders, looking after every kind of machine, and finally, the minority who stayed on after about 17 years of age, themselves became spinners or rovers.

Work went on until the call for a quarter of an hour's halt for breakfast or "bagging." Cotton dust was picked and blown off bread, and cans of tea uncorked. But the children had to scurry about cleaning the machinery. They got a mouthful when they could. At dinner time the same thing happened in many mills. By four or five o'clock, the mill room had become a detestable place. As a rule, the children were forbidden to sit at all, and anything that could be used as a seat was taken away. An overlooker said :

"They are all tired ; the last hour but one is the worst in the day, and they are going to see what o'clock it is about every five minutes. I have stood in the dark, and have not spoken a word, but have given a good lacing to every one that came ; they know what it was for."

Even kindly overlookers could not get work out of the children without strapping, jogging, shaking, a dose of snuff, a box on the ears, or a douche of cold water. Many a child went through the right movements half asleep. At six o'clock, in ordinary times, the grown workers knocked off; but the children had to clean the machines after the engine stopped, and left at last, dead-beat. A Dewsbury slubber,* whose own children worked under him in the mill, said :

“Many a time I have seen their hands moving while they have been nodding almost asleep, and they have spoiled the thread, and we have had to beat them for it. . . . At the end of their day's work, instead of taking their victuals, they have dropped asleep with their victuals in their hand.”

In brisk times, mills worked night and day. In a Leeds woollen mill, a set of children worked, for a space, twenty hours and sixteen hours on alternate days, and slept in the factory, among the damp pieces of cloth.

The children's sufferings were largely due to the way in which the mills were managed. The master was the supreme ruler; he decided the hours of work and the rates of wages. But the master's real business lay with the output and sale. In some mills he was never seen at all. All masters appointed overlookers, and it was these men who engaged and dismissed the workpeople. In some mills, both in Lancashire and Yorkshire, each slubber or spinner engaged his own scavengers and pieceners, and paid them, and then received pay himself for the output of the team. The overlooker, walking about, regulated the room. Bad overlookers tended to get with bad masters. The legal remedy for ill-treatment had to be sought from a Justice of the Peace, but this meant dismissal from work. On the other hand, some mills stood out, by virtue of the personal character of the master. Strutt's mills at Belper were so good that the hands took no interest in Factory Acts.

* A slubber in a woollen mill was the equivalent of a spinner in a cotton mill.

Wages began at about 2s. a week, as the following table shows :

WAGES OF PEOPLE EMPLOYED IN CERTAIN COTTON FACTORIES,
ABOUT 1832.

Age.	Male.		Female.		Age.	Male.		Female.	
	s.	d.	s.	d.		s.	d.	s.	d.
Below 11	2	3½	2	4¾	21-26	17	2½	8	5
11-16	4	1¾	4	3	26-31	20	4½	8	7¾
16-21	10	2½	7	3½	Men above 31 earned about 23s. a week, but few were em- ployed.				

Thus, most women workers never earned more than 10s. a week. Yet in those days these wages were not so low as they seem now. In 1832 a Factory Commissioner wrote :

"The wages . . . are so large as would appear almost incredible to those accustomed to regard the scanty earnings of the agricultural labourer."

From time to time, Parliament had passed Acts to limit the children's hours,* but these Acts had all proved ineffective, because no one was specially appointed to enforce them. The only people really interested were north-country working men and women with no votes. Ordinary English people knew nothing at all about the mills. Even in Lancashire and Yorkshire, thousands of farmers and traders and gentlefolk were quite ignorant of factory life. In Leeds itself, men like Richard Oastler, a business man, and Michael Sadler, well known for his work among the poor, thought that the mills were really very beneficial. Oastler became agent to a country gentleman near Huddersfield, but he kept up his friendships with mill-owners. Dining with one, in September, 1830, he heard his friend speak of changes in his

* See "*Piers Plowman Social and Economic Histories*," Book VI., p. 142.

own mill, and of the state of some others. For the first time he realized the truth. Vehement and emotional, he wrote that very night a letter to the *Leeds Mercury* :

“ Let truth speak out, appalling as the statement may appear. The fact is true. Thousands of our fellow creatures, . . . the miserable inhabitants of Yorkshire towns are this very moment existing in a state of slavery. . . . Would that I had a Brougham's eloquence, that I might rouse the hearts of the nation, and make every Briton swear, ' These innocents shall be free ! ' ”

The letter, headed “ Yorkshire Slavery,” appeared next day. It aroused hundreds of workpeople, and also hundreds of educated men. All over Lancashire and Yorkshire, public meetings were held. Within a year, a member brought a bill into Parliament, but it proved too weak to gain support. In December, 1831, Mr. Sadler, who was member for a little Yorkshire town, brought forward another bill. The House of Commons appointed a Select Committee, and mill-owners and their friends flocked to give evidence. But Sadler caused mill lads and mill girls, old bent men and active young spinners, children of fourteen, and young cripples, maimed for life at seventeen or eighteen, to come before the Committee. Their pitiful experiences, told in broad dialect, their bent knees and thighs, their descriptions of their work, convinced the Committee, and all those who read the newspapers. Yet not until 1833 did the Act pass, so strong was the resistance of the manufacturers. Even then, the Act was a compromise, and the operatives were deeply dissatisfied. Yet it was most valuable. It laid down rules for children's work in all textile mills which had steam power, that is, the new mills. No child under 9 years of age was to be employed at all. Between 9 years and 13, they were to work eight hours a day only, and from 13 to 18, young people were limited to twelve hours. Time was to be allowed for meals. Moreover, between the ages of 9 and 13, the mill child was to spend two hours a day at school. Two great changes were made to secure the

enforcement of the Act. Responsibility was laid on the masters, and inspectors were appointed to visit mills, see that the rules were kept, and if they were broken to sue both master and parent.

The first inspectors, four in number, had great difficulties. Their work was to see the new registers and records which mill-owners must keep. The registers contained the name of each child and young person, the hours he or she worked, the hours worked in the mill, and the times allowed for meals. The records consisted of an age certificate for every child of 9 and for every child of 13, signed by a surgeon and by a magistrate, stating that the child "appeared to be" of the age stated. Also, there were bundles of vouchers for each day's school attendance of every child between 9 and 13.

The inspectors met with strong opposition. The mill-owner wanted the children's work. He did not want all the forms and papers. Moreover, he had to provide schooling, if no school were within reach. Besides, on him fell the work of dragooning his workpeople into obedience. The spinners and slubbers, and even many parents, disobeyed the law. In 1836, an inspector saw a very young-looking child at work as a piecener. On inquiry, he found that the child was only eight, that he had been turned out of the mill several times by the overlooker, and that the master had repeatedly given general orders that no child was to enter the mill until he was nine. But the child was employed by his brother, a spinner, who was obstinate. Parents and relations were among the worst offenders. Sometimes a mother lied to the surgeons about a child's age. The doctors could only judge by the look * of the boy or girl, but no two people agreed how tall a child of nine should be. Some surgeons let the children keep their shoes on, and parents padded them with cotton waste. Some were so easy-going that they passed any child.

* *There was then no compulsory registration of births.*

Often the signature of a Justice of the Peace was valueless, as bundles of 100 certificates were sent together to Petty Sessions, and signed as a matter of form. The inspectors pleaded for the special appointment of responsible doctors, and from 1844 this was done. But if the law were broken, magistrates hardly ever fined heavily.* As to the schooling, most parents thought it simply a hindrance to serious work.

Yet, after 1833, the inspectors won a great victory. They really enforced the Act, and taught masters and men that better conditions of work did not mean ruin. In 1844, 1847, and 1850, the Act was altered and extended, as the table shows :

FACTORY HOURS, 1830-1850.

Description.	Children under 9.	Children from 9 to 13.	Young persons, 13 to 18.	Women.
Act of 1833	Not to be employed	8 hours' work, 2 hours' school.	12 hours' work.	(Not dealt with.)
" 1844	"	6½ hours' work, and school.	<hr/>	
" 1847	"	" "	12 hours a day and 9 on Saturday.	
" 1850	"	" "	10 hours a day.	
			11 hours a day and 5 on Saturday.	

It was in the inspected factory that a new standard of industrial life began to be set up.

4) The fourth group of industries were those of coal and iron, and linked with them the rising trade of engineering. The coal-mining industry was as yet on a small scale. Even in 1850, there were only some 200,000 pitmen, whereas, in 1839, in textile factories alone, over 400,000 people were

* Between April and December, 1839, an Inspector got 1550 convictions, and 95 per cent. of the fines were under £5.

employed. The collieries of 1830 were comparatively simple. They were managed, quite unscientifically, by men who had raised themselves from the ranks of the pitmen; their subordinates, the "deputy overmen," were quite ignorant, and often incapable of enforcing proper precautions on the careless pitmen. Power was used at the surface of many collieries: steam-pumps were common; in the more advanced collieries, steam-winders hauled up the coals, and the colliery railway had ousted the horse-tram.



FIG. 9. — Staffordshire Colliers in 1842.

From "The Illustrated London News," 1882.

Underground, however, mining was still entirely a handicraft. There even the haulage was often done by youths and children. In some districts,* girls and women went down the pits, and their work was often to carry the coals up, basket by basket. So terrible were the conditions, that in 1842, through the work of Lord Shaftesbury, the first Act dealing with coal-mines was passed. It only removed the worst abuses, forbidding the work of

women and children. It was not until 1850 that Parliament first ordered the appointment of inspectors to visit mines. The dangers of the miners' lives were terrible. The use of unprotected candles was still quite common. Explosions were far more frequent than they are now. In Durham and Northumberland, in 1830, miners still bound themselves for a year to one master, on hard terms. In the

The West Riding, N. Lancashire, Eastern part of Scotland, and S. Wales.

Stafford and Midland coal-fields, they were hired by middle-men called Butties, who defrauded them in every way. Often they were paid in tickets available only at shops kept by the Butties. They were cheated in the reckoning of the baskets of coal they delivered. The pitman was usually quite ignorant, having begun work at nine or ten years of age. Hence his existence was often coarse and hard, save where, as in the Durham coalfield, a religious revival sent him down the shaft with the words of the Bible ringing in his ears.

(1) During this period, the iron trade too was growing, because with the use of power came the need for machinery, and this was mostly made of iron. With this change came many new branches of work, and of these the chief was engineering. The trade had taken its rise in the days when blacksmiths and millwrights first began to cast and forge machine parts under the great inventors. Stephenson's engine parts were all made by the smiths at the colliery. Their work was often extremely inaccurate. Moreover, Stephenson merely gave the smith a clear idea of the shape and size of the piece, and he worked it out for himself. A modern engineer described this as "leaving half the designing to the mechanic."

But by about 1840, two developments had taken place. First, many master engineers were specializing in some particular kind of machine. Second, machine tools were being invented. An engineer explained this in 1841 :

"What used to be called tools were simple instruments, such as hammers and chisels and files ; but those now called tools are in fact machines, and very important machines, . . . made at a very great cost, from £100 up to £2,000 each. . . . Planing machines were very little used 20 years ago ; they have been very much improved. . . . At that time, after cutting teeth, we had to round them up with a file ; now the machine itself is so much improved that whereas we could formerly get a machine of that kind for £20 to £30, now there is nothing fit to use under £100 ; the improved machine finishes the wheel without the use of the workman, and it makes it much more perfect. Most of the tools are self-acting, and go on without the aid of the men."

Beside these tools, Nasmyth introduced his steam-hammer in 1843. In the next generation, Whitworth followed Nasmyth, as the great inventor of machine tools. By 1870 the making of these tools had become a great industry in itself.

“The Whitworths and other great firms of the North must provide the machine tools before the steam-engine builders, locomotive makers, and machinists generally can set to work,”

wrote Dodd.

The principal machine tools then in use were those for turning, planing, slotting [cutting holes], drilling, shaping, punching, and shearing, and also the steam-hammer.

Among the men, the older classes of master and journey-men amongst the millwrights and smiths died away, and new distinctions arose. The whole group began before 1850 to call themselves “Engineers.” At first, the men who worked the new machines were regarded as unskilled labourers. But gradually these men were recognized for what they were—skilled mechanics. By the early 'seventies the engineers were beginning to be looked on as “the Aristocrats of Labour.”

II. INDUSTRIES FROM 1850 TO 1875

The twenty-five years after 1850 were those when “England was the workshop of the world.” Even the old handicrafts described above were affected. Some passed almost at a bound into the factory stage. In 1840, every pair of boots was made by some hard-handed cobbler in his little shop. Thirty years later, two sets of machines and labour-saving tools had been invented, one large and requiring steam-power, the other small and cheap, for hand use. Boot factories arose at Northampton, Leicester, and Stafford, where the heavy machines were used; gradually the main trade came to these factories, and a great export of English

boots began. The small master-cobblers had either to live by orders for handsewn boots, or to make standard patterns as the factories did. Especially in London, many a man bought the cheap outfit, and got together a team of helpers. They worked in miserable, insanitary rooms, lived on bread and tea eaten at the bench, and toiled twelve or sixteen hours for a wretched wage.

2) Among the industries of the second group described above, many were also gradually passing into the factory stage, as the following list shows :

<u>Coventry ribbons</u>	1830	A few factories.	Many cottage looms.
	1866	Many factories.	A few cottage looms.
<u>Hosiery</u>	1844	Chiefly in cottages on owned or hired looms, or in hired rooms on hired looms.	
	1861	A few factories.	Chiefly as above.
	1874	Loom rents forbidden by Parliament.	
	1876	Mainly in factories.	
<u>Lace</u>	1841	Chiefly by hand machines in cottages or workshops.	
	1861	Partly in factories, partly as above.	
	1873	Chiefly in factories.	

In spite, however, of this growth of factory work, during this period the number of small workshops and cottage work-rooms increased. The little nail shops in all the district round Bromwich persisted, with all their evils for women and children. In the stocking trade, the "workshops," holding from 10 to 40 or 50 frames, and the cottages each holding one or two, were scattered in the 'sixties through 250 parishes of Notts, Leicester, and Derbyshire. The shops were rarely more than 7 feet high and 30 feet long by 17 feet broad, and were crowded with frames.

"In the cottages, there are often one to four frames in the only living-room, . . . and of necessity, in these rooms, crowded as they are . . . meals (such as can be had) are cooked and eaten, infants nursed and put to bed, and other home work done."

The whole family worked ; the little boys wound, and the mother and younger children seamed hose or woollen gloves. In 1862, a Leicester work-girl explained :

" Little children here begin work at stitching gloves very young. My little sister was $5\frac{1}{2}$ years old . . . she used to stand on a stool so as to be able to see up to the candle on the table."

A stocking weaver, John Corbett, had two daughters, Alice and Annie, who both began as seamers at 4 years of age, or earlier ; when they were 6 and 8 years old, each would seam six or seven pairs of stockings a day. On Friday nights they were often up till midnight, and many times Annie sat up with mother, seaming all through Friday night, and not going to bed until Saturday evening. As Corbett said :

" Those who can be up, must be up. It is general in the town to work that way. . . . There's a many begin at 4 and 5 years old. They do begin very young, but you see we're used to it, we take no notice."

Up to the year 1861 the only mills under the Factory Acts were those in which power was used in the manufacture of cottons and woollen, in the printing of calico, and in bleaching. Such works stood out from all others. They were relatively clean ; and the hours were regular and limited. True, the hours for children were too long, the schooling and the sanitary conditions still very bad, and the machinery most dangerous, for lack of fencing. Yet the old spirit had altered ; of their own will men were beginning to obey the law. Those who best appreciated the inspected factories were the workers in uninspected places. Sweated bootmakers, home-working hustian cutters, Staffordshire potters and many others, began to want factory conditions. Public opinion, too, was shocked in 1860 by customs which had been accepted everywhere in 1840. From 1861, there was a rapid extension of the Factory Acts to trade after trade. In 1866 the report of a Royal Commission laid bare the truth as to children's work in

unregulated factories, in workshops, in potteries, and in brick-yards. In 1867 Parliament passed the Factories and Workshops Act. "In it," said an inspector triumphantly, "the whole field of industrial labour is now covered." The Act changed the definition of a factory. The word was now to mean any place in which fifty persons or more were making anything. Moreover, smaller places such as the Coventry ribbon weavers' cottages came under the Act, because textiles were being made by the aid of steam power. An inspector near Wolverhampton reported that these changes gave him 144 factories, whereas previously he had only visited a handful of works. "Workshops," too, were brought under the Act. A workshop was a place where more than five, and fewer than fifty people were employed, and in a workshop no child under 8 years old might be employed at all. Every child under 13 was limited to $6\frac{1}{2}$ hours of work, and must spend 10 hours a week at school.

Workshops were of varied types. Visiting along a street in Birmingham, an inspector jotted down the occupations thus :

"Silversmith, milliner, bone buttons, harness, furniture-polishing, pearl buttons, tin boxes, bricks, bricks, milliner."

None of these workshops had ever opened the door to an inspector before. Some masters were suspicious, and some workers broke the law on purpose, others because they could not read and the law had never got into their heads. There were, moreover, still gaps ; in agriculture and in home employments thousands of children still suffered. But wherever the inspectors came, they gradually conciliated masters and men, and helped to lift the standard of life.

When we turn from factories to the industry that supplied their power, we find that between 1850 and 1875 the output of coal increased enormously, as the table shows :

		Million tons.		Million tons.
S. Wales	1858	8	1878	Nearly 17½
N. Wales (Ruabon and Flint)	1858	About 1	"	2¼
S. Staffs	1858	Nearly 5	"	Over 9
N. Staffs	1858	Over 1	"	Over 4
Lancashire	1857	8½	"	Nearly 19
Cumberland	1856	Over ¾	"	1½
Leicester		Nearly ¾	"	Over 1
Derbyshire, Notts, Yorks	1857	12½	"	Nearly 27
Durham and Northants	1857	Nearly 16	"	Over 30
Scotland	1858	Nearly 9	"	Nearly 18

The total output rose from 30,000,000 tons in 1830 to over 133,000,000 tons in 1875. The increase was obtained by the opening of fresh pits, for instance, in South Wales, and by greater economy in the coal-getting. With the rising importance of coal, chemists and other scientific men came to study the mines, and worked out a new science of mining. They impressed upon Parliament and on the miners the need for trained managers and deputies. In 1855 the number of inspectors was increased, and a code of seven rules was made binding on all owners; varied and enlarged, it is still in force. Thus the pitmen, more than other workers, came to look to Parliament for special protection. Parliament dealt too with the long-standing grievances of miners. Thus wages were paid according to the number of baskets of coal delivered to each man; often the baskets were merely counted, a very rough method of estimating the amount. In 1860, an Act ordained that coal might be weighed. But in the few collieries where the change was made, local untested weights were often used, and the men mistrusted the officials who weighed. At last, in 1872, the Mines Regulation Act ordered that coal should be weighed in machines on the pit bank, with imperial tested weights. Thus both mines and

mining customs were beginning to be like those of the present day.

4 Closely connected with the coal trade was the growth of the iron industry. It had become an age of iron. "It is only during the lives of many living ironmasters that the manufacture has become one of the most important in British industry," said an ironmaster in 1876. Yet England could satisfy the demand, largely because of the opening up in this

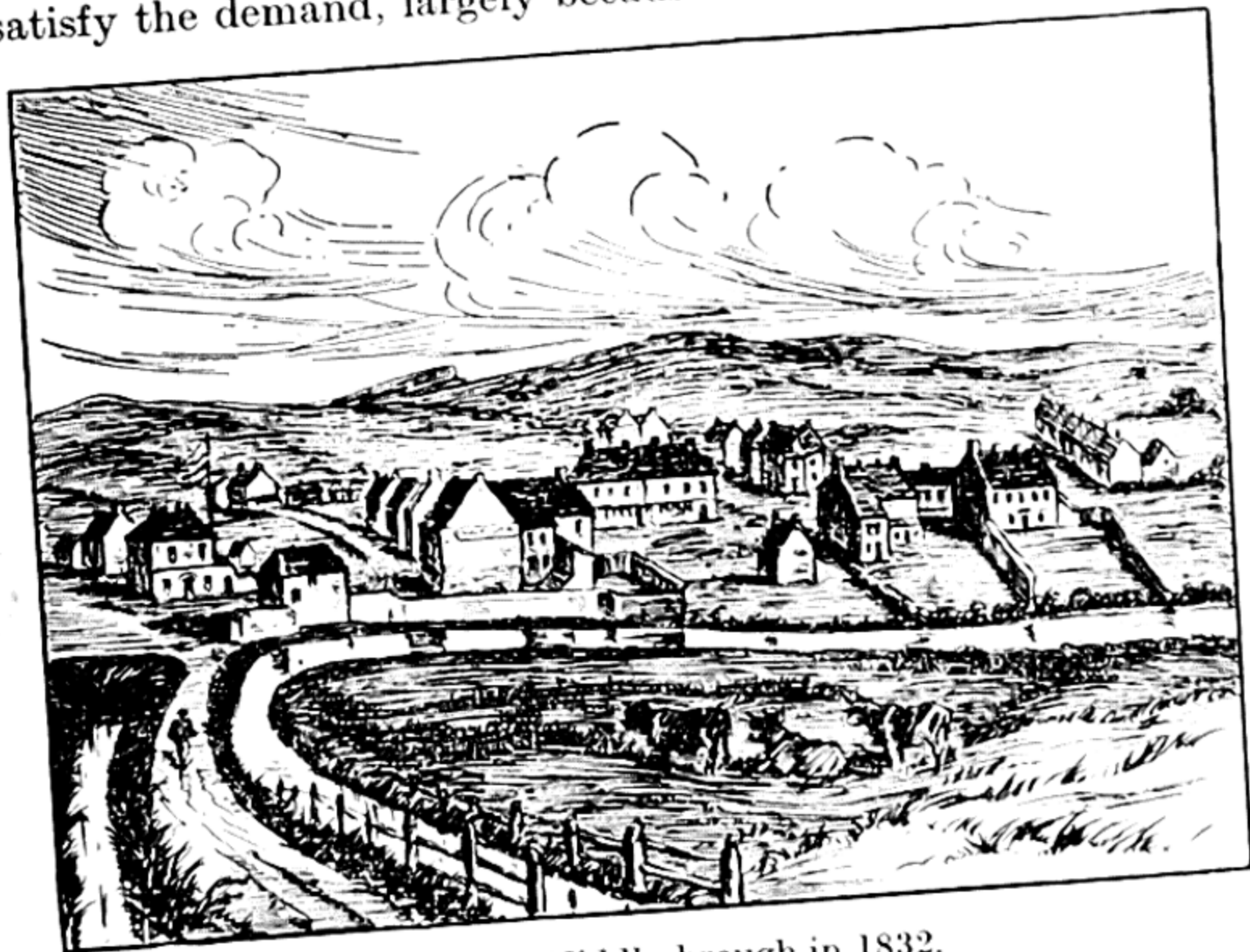
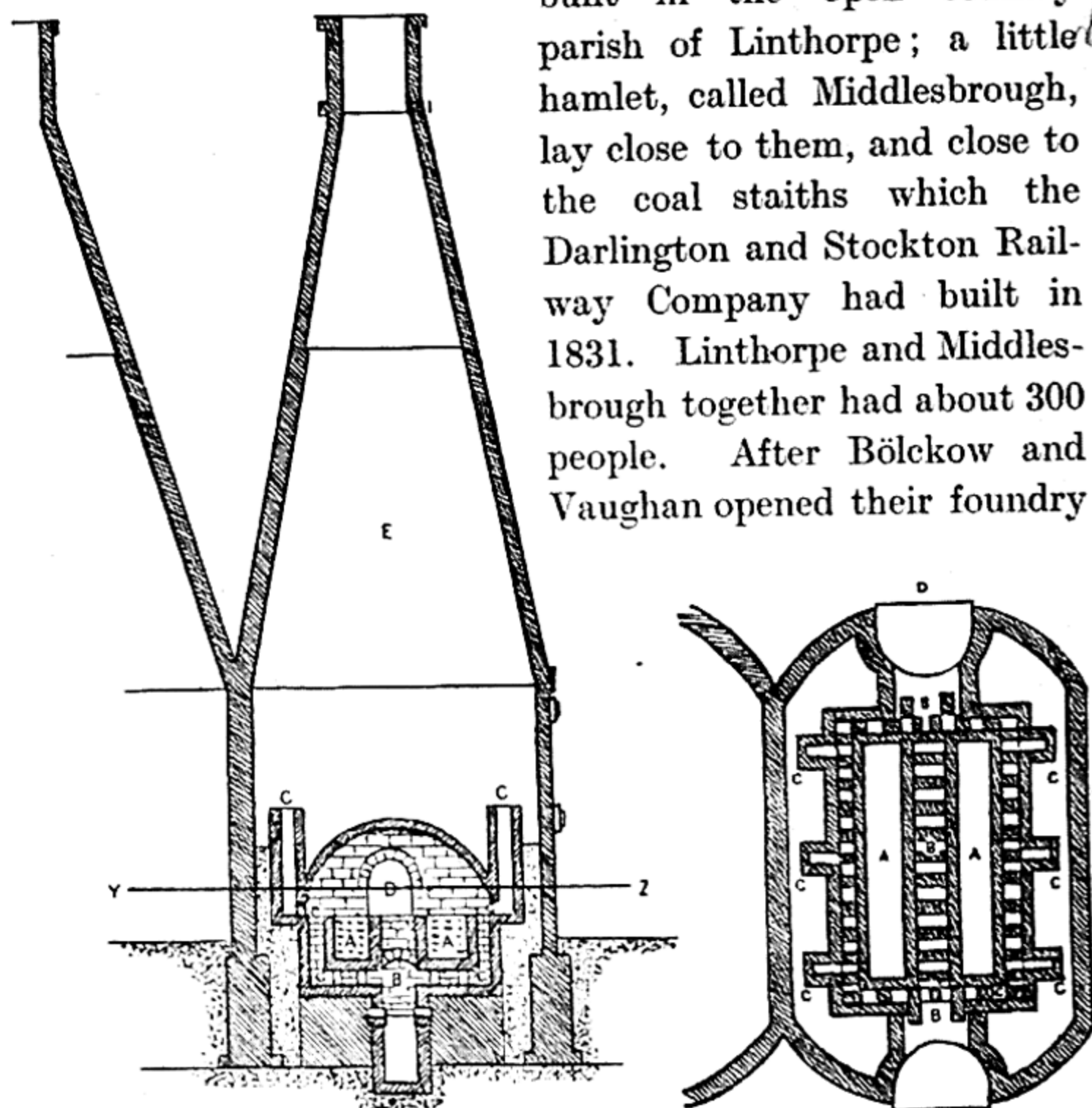


FIG. 10.—Middlesbrough in 1832.
From "The Illustrated London News," 1881, vol. ii. 832.

period of the greatest English iron-field, that of the Cleveland district. In the North Yorkshire moorlands, iron-stone, an ore of which 30 per cent. is iron, lies in strata about 10 to 17 feet in thickness, and often quite near the surface. In 1851 this ore was discovered by a man named John Vaughan, and he and his partner, Bölcow, bought land for works on Tees-side, and secured mining rights in the hills. In 1826 there had been 266 iron-smelting furnaces in England and

Wales, and none in Cleveland ; in 1874 there were 139 furnaces in this district alone, and there about a fifth of all British pig-iron was made. The Bölckow-Vaughan works had been

built in the open country parish of Linthorpe ; a little hamlet, called Middlesbrough, lay close to them, and close to the coal staiths which the Darlington and Stockton Railway Company had built in 1831. Linthorpe and Middlesbrough together had about 300 people. After Bölckow and Vaughan opened their foundry



FIGS. 11A & B.—Section and Plan of a Cementation Furnace.

From W. H. Greenwood, "Steel and Iron."

A, A, Troughs called "Pots," about 12 ft. long and 3 ft. wide, running right across the furnace.

B, The fire which runs between the troughs, right across the furnace.

C, C, C, Flues and chimneys up which the flames pass, surrounding the Pots. The chimneys smoked out into the big brick chimney E.

D, The door through which the fire was stoked.

E, The big furnace-chimney.

Five or six such furnaces usually stood in a row. The pots were filled with charcoal and iron in alternate layers, and plastered over with the mud from the troughs of the Sheffield grindstones. This fused, and became air-tight. The pots were roasted from seven to ten days.

and forge, the railway company made a little dock at the railhead. By 1871 Middlesbrough counted 40,000 people. In the early 'seventies, the English iron trade was the greatest in the world; apart from our own demands, iron goods exported were valued, in 1867, at £13,000,000.

Hitherto, in the making of machinery, wood had been steadily replaced by metal, and that metal was iron. Steel was too dear to be used except for the finest tools and instruments, and for cutlery. Steel is iron which is first purified, to make it flexible, and then recombined with certain proportions of carbon to make it hard. In 1850, whereas wrought-iron contained only about 25 per cent. of carbon, steel was made of two consistencies, as follows:

Ordinary steel = iron combined with .5% to 1% of carbon.

Very hard steel = iron combined with 1% to 1½% of carbon.

These steels were made at Sheffield, and were famous all the world over. They were named "cast steel," or "Sheffield pot steel," because the iron was carbonized in crucibles called

"pots." The process was expensive, and only fine iron ores could be used. Much pure Swedish ore was imported and

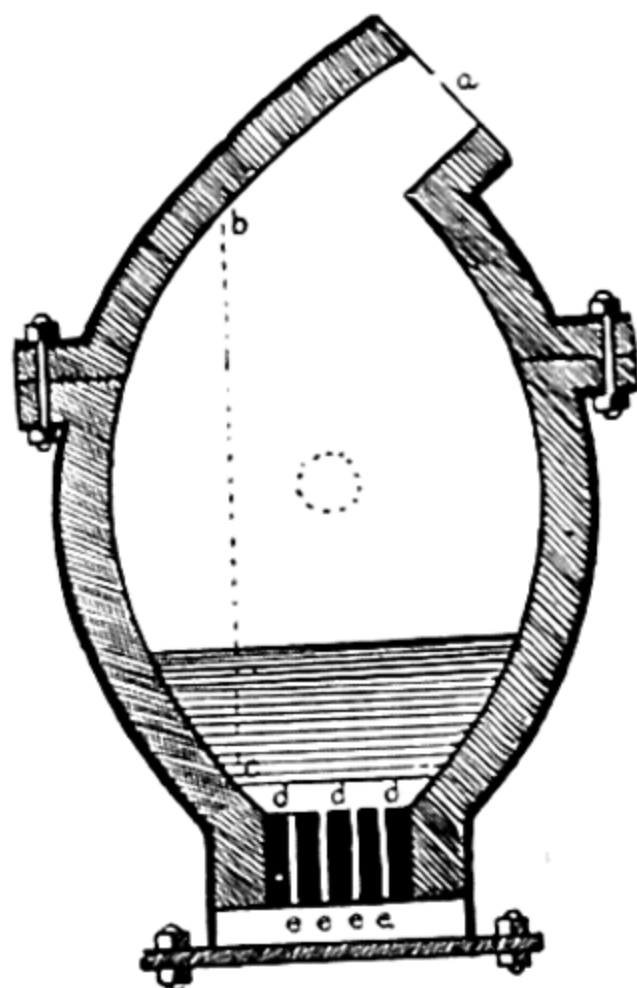


FIG. 12.—Diagram of a Bessemer Converter.

From W. M. Williams, "Iron and Steel."

The converter can be turned so as to lie on its side. It is heated until the inside lining is red-hot, and then turned until the line *b-c* is horizontal. The melted metal is then poured in at the spout *a*. The air-blast is then turned on, and the converter turned upright, as in the figure. The air is blown through the hole *sd-e*, *d-e*, and the blast is strong enough to keep the metal from running through them. After about 20 minutes the converter is swung on its side, and the Spiegel Eisen added. When this has worked, the steel is made. It is poured off into a large vessel called "the Ladle."

brought to Sheffield to be "converted." The making of the steel, and the working of it into cutlery were the old Sheffield trades, and they went on prosperously in this period.

For a long time, inventors had been trying to use the rough English ores for steel, and had indeed produced a type of steel which was so brittle as to be useless. But in 1856 an English engineer, named Henry Bessemer, invented a new process, in which iron could be converted much more cheaply into steel than ever before. The molten pig-iron was poured into a huge vessel called a converter, and then, from beneath, air was sprayed or forced upwards in countless streams, and removing from it carbon and other impurities. Henry Bessemer erected steelworks in Sheffield and was able to undersell other manufacturers by £20 a ton. Many makers paid him for licence to use his process, and the "age of steel" began.

The Bessemer product was not as hard as pot steel, for it contained less carbon. But it cost about a quarter the price. Thus, as it was more durable and harder than iron, and cheaper than pot steel, it served excellently for rails, machinery, and plates. Between 1860 and 1870 it was made on a large scale in England only, and all the other countries bought it from us.

III. THE LIFE OF THE WORKER

Turning from the industry to the worker, we find that between the years 1850 and 1875 there was still a marked line between the skilled worker and the unskilled labourer. Writing of London life about 1852, Henry Mayhew described the social difference thus :

"In passing from the skilled operative of the West End to the unskilled workman of the East End . . . the moral and intellectual change is so great that it seems as if we were in a new land. . . . The artisans are almost to a man red-hot politicians. . . . The unskilled labourers, as yet, are as unpolitical as footmen !"

The skilled worker was often fairly comfortable. Compared with his father's fare about 1840, his own, about 1870, was good. A tailor, in 1830, told how his diet was mainly bread and tea, onions, cheese, and porter; a carpenter said the same. In 1845, sugar was a luxury even to middle class people, and clothes were still very dear. But after 1850, prices of food were falling; the skilled man got his tea, coffee, and sugar, and hot meat often once a day, and a good joint with potatoes on Sundays. Towards 1860, Yorkshire manufacturers were beginning to make cheap cloth known as shoddy, and factory-made boots were growing less expensive.

This improvement in comfort was partly due to the fall of prices that followed free imports, partly to lowered prices due to the increase of our production, partly to the gradual rise of wages,* and partly to the new Poor Law. In many trades, too, there was for a whole generation fairly regular employment. Yet many bad customs remained. To get work, a man who belonged to a trades union went to his union's room, and this was nearly always in a public-house. For other men, publicans often kept lists for employers and men in their neighbourhood. In 1862 an observer wrote:

"There is a great deal of temptation to drinking caused by the present system of the register . . . being kept by landlords of public-houses. The first names called off that register are . . . not always the first on the list, but too often those of the publicans' best customers, and . . . men going to the house of call must generally spend something for the good of the house. Young men coming up from the country to large towns to work, go straight to a house of call."

Moreover, masters often paid wages late on Saturday at a public-house, and of this, the wiser men complained bitterly.

* Taking the wages paid in 1898-1902 as a standard, the rise was as follows:

100 = wages paid in 1898-1902.	Buildng.	Engineer- ing.	Iron and Steel.	Mining.	Cotton.	Woollens.
1848-52	59	69	63	60	55	71
1858-62	68	74	65	67	67	82
1868-72	77	79	74	72	79	98

If the search for employment lasted long, the man's savings went, then his goods, and last his tools. Mayhew met a carpenter in a night refuge, who said to him :

"I have been out of work nearly three months. . . . The last job I had was at Cobham, in Surrey, doing joiner's work, and business with my master got slack, and I was discharged. Then I made my way to London, and have been about from place to place ever since, endeavouring to get work from every one I knew or could get recommended to. But I have not met with any success. Well, sir, I have been obliged to part with all I had, even to my tools. . . . My tools are pawned for 10s., and my clothes are all gone. The last I had to part with was my rule and chalk line. . . . It is now three weeks since the last of my things went, and after that I have been about the streets, and gone into bakers' shops and asked for a crust."

In those days, old age and sickness had to be met from a man's own resources. Thrifty men joined provident societies, and those who belonged to trades unions got some benefits, but only very few were members of a union. Many had no chance of providing for themselves. Mayhew asked an old bootmaker what he would do if he fell ill. "Oh, bless you," he replied, "there's nothing but the parish for us." A cabinet-maker, sixty-three years old, told him, "When I'm past work, or can't meet with any, there's nothing but the workhouse for me."

Even for the employed and thrifty man, life was difficult in two new ways. With the new, swift machines, the chances of accidents became much greater. Secondly, the prospects of rising in a trade became slighter and slighter. A man might become a foreman, or one in a hundred might become a manager. But to be a small master, competing against factory work, was a miserable lot. On the whole, in 1875 the owners of capital and the classes of labour were drawing farther than ever apart.

BOOK LIST

Author.	Book.	Publisher.
Broadhurst, H. ..	H. Broadhurst, M.P. ..	<i>Hutchinson & Co.</i>
Boyd, R. M. ..	Coal Pits and Pitmen ..	<i>Whittaker & Co.</i>
Carlyle, T. ..	Past and Present	—
Gaskell, Mrs. ..	(1) Mary Barton	—
	(2) North and South	
Gibbins, H. de B.,	Economic and Industrial Pro-	<i>Chambers.</i>
	gress of the 19th Century	
Haw, G.	From Workhouse to West-	<i>Cassell & Co.</i>
	minster. (The Life Story	
	of Will Crooks)	
Hutchins, B. L.,	A History of Factory Legis-	<i>P. S. King & Son.</i>
and Harrison, A.	lation	
Mayhew, H. ..	London Labour and the Lon-	<i>Griffin & Co.</i>
	don Poor	
Porter, G. R. ..	Progress of the Nation ..	<i>Methuen.</i>
Watson, A. ..	A Great Labour Leader (The	<i>Brown, Langham</i>
	Life of T. Burt)	<i>& Co.</i>
Wing, C. ..	The Evils of the Factory	
	System. Published in 1837	
Webb, S... ..	The Story of the Durham	<i>Labour Publishing</i>
	Miners	<i>Co.</i>
Parliamentary	(1) Reports of Factory In-	
Papers	spectors	
	(2) Report of the Select Com-	
	mittee of the House of	
	Commons on the Working	
	of the Factory Acts, 1840	
	(3) Report of the Royal Com-	
	mission on the Employ-	
	ment of Children, 1866	

CHAPTER IV

ENGLISH INDUSTRIES AND THE LIFE OF THE WORKER (1875-1925)

I. ENGLISH INDUSTRIES (1875-1925)

DURING the last fifty years, the Industrial Revolution has been completed in Britain. In the trades in which machinery was already in use in 1875, it has developed much further; it has also captured practically all other trades. The first result has been that the amount of machinery has increased vastly, and engineering has therefore become the master trade of modern times. In the second place, the extension of the Industrial Revolution has meant a vast increase in the demand for iron and steel, wherewith to make the new machines. Lastly, for long years there was a similar growth of the demand for coal, until recently the one ultimate source of power. Thus, since 1875, the engineering, metal and coal-mining trades have come forward into the very front rank.

Already by 1875, trade after trade was becoming dependent on the engineer. For example, joiner's work had always seemed specially unsuited to power-driven machinery, and yet, after 1850, it underwent the common change. In the mid-19th century, the steam-driven circular saw was being perfected, many rapid, powerful planing machines were being made, and small machines, working with low power, could be bought quite cheaply, to saw, to plane, to cut mouldings, and to mortise.* All these were coming into use in large

* To mortise is to join two pieces of wood by fitting a projection from one into a notch in the other.

workshops in the 'seventies, and by about 1880, even in the country towns, steam joineries were beginning to be built. After 1890, machine work came in rapidly, and at the present



FIG. 13.—Potter making Heavy Articles.

From W. Pyne's "Microcosm," 1803-6.

The assistant is turning the wheel. This drawing was made about 1805. The same simple arrangement survived down to 1897, as described by an inspector.

day, most of the woodwork around us, in windows and doors, chairs and tables, is shaped by machinery. Before the 19th century ended it had become rare to find an industry such as pottery-making, in which men had not begun to use power.



FIG. 14.—A Potter working with a Small Foot Wheel.

From W. Pyne's "Microcosm," 1803-6.

The call made by so many trades on engineering caused great changes in the industry itself. In the first place, the numbers employed naturally grew larger. They increased

2) from about 210,000 in 1891, to over 740,000 in 1907. Moreover, the different branches of engineering were now definitely becoming separate trades.* In old days, in the 'fifties and later, engineering firms often took in almost any kind of work, even though each firm usually had some special line of its own. For example, as late as 1880, Gimson's of Leicester did general engineering as well as special work in making knitting machinery. In the 'fifties, therefore, a man was trained as a general engineer, and could then be put to almost any job. But with new inventions and the increase in the number of machine tools, men had to learn new types of work ; for example, this happened when electrical engineering, and later the work of petrol-motors grew to a large scale. By the 'nineties, too, the engineering trade unions were refusing to allow a man to go from one type of machine to another.

All this changed the actual work in the shops. The groups of workmen were altering. There was still, it is true, in some works one group of hand workers, the smiths, employed for instance in locomotive-building works. But the fitters were already a separate group, formed in the previous period. Their work was to put together parts made by other men.

" In the fitting sheds are lathes, large and small, machines for slotting, sharpening, and drilling, punches and shears, and hydraulic tackle. There are hundreds of yards of steel shafting, pulleys and wheels innumerable, and miles of beltage. . . . The space between the floor and the roof seems to be entirely occupied with swiftly revolving wheels and belts. The wheels revolve almost without sound, the shafting turns and spins silently. The greatest noise is made by those who are busily chipping at the benches."

The boiler-makers, both rivetters and platers, worked in a regular pandemonium, the crashing of hammers on boiler plates literally deafening the ordinary hearer. Two other main classes were the turners and the machinemen. The turners worked at the lathes which spun away quietly and

* *Viz.* Shipbuilding, electrical work, locomotive and railway work, and the cycle and motor industries.

ceaselessly, driven by power; and the machinemen worked the different machine tools, such as the drilling machine and the slotting press. The pattern-makers, who made the shapes on which iron castings were formed, were also an old group, but for them, as well as for all the rest, a much higher degree of accuracy in work was demanded than of old. Just as the railway men had to learn to keep time, so the engineers had to learn to keep measure.

“Have everything accurate. . . . Work exactly to the dimensions, where parts have to fit together. Let your 2 inches be 2 inches and not $1\frac{3}{4}$. Let your circle be a circle, and not a distorted ellipse with a hump on one side.”

So said a manager to his men. Gradually, because the men learnt to be accurate, it became possible to make standard patterns and interchangeable parts, and thus to repair machinery even in remote, isolated places. “Cultivate orders for standard patterns, and make as many things alike as possible at one time,” counselled a manager in 1899. Such methods saved time, and thus increased our output, until before 1914 it reached huge dimensions.

But the change altered the position of the men. They had less initiative than before. They now showed their skill in their exactness, and in the clearness with which they followed the complicated drawings sent down from the drawing office. Most of all this change fell upon the foreman. Earlier, the foreman actually corrected a working drawing or put in a detail, if he thought fit. But by the 'nineties, a good engineering firm kept technical draughtsmen so expert that their drawings had to be followed absolutely by the men at the benches. So the foreman lost some of his old technical authority. “Now, they are simply good, steady, reliable workmen, advanced to a higher position,” said a master. But the foremen were still the rulers of the shop, still engaged and dismissed men, and still in some

places fixed the scale of pay at which a newcomer began work. Firms often expected the foreman to rule the men altogether, without intervention from the employer. One master said :

“ If the foreman is not a master’s man rather than a men’s man, the sooner he leaves the workshop the better for the master.”

Had a workman of 1850 revisited his shop in 1910, he would doubtless have been partly pleased and partly puzzled. Shops were now far better built and equipped, airier and lighter, better warmed, and better ventilated. Wages had risen steadily. But the pace in the shops, and the pressure on the men to get on with the work, had quickened with the machinery. Besides, the old fellow would have found that the work on the benches was very exact, and that the drawings lying about were very complicated. He would have seen machines that he did not understand, and felt perhaps that, old skilful worker as he was, he was almost like a beginner here.

The great development of steam-worked industry was inevitably accompanied by a vast growth of coal-mining. As power-driven machines came into every branch of work, coal became more and more the foundation of our daily labour and our daily comforts. Before 1914 the numbers employed in our coal trade had increased more than those in our cotton, woollen, iron, or steel manufactures, and more than in any great trade except engineering and transport work. Hence, when any important question affecting coal mines arose, it concerned the whole nation far more than it would have done in 1830. The following table shows the change in the output of English coal between 1870 and 1909 :

Year.	Tons raised in the U.K.	Tons consumed at home.	Tons consumed abroad.
1870	110,400,000	Over 96,000,000	14,000,000
1899	181,600,000	Nearly 143,000,000	39,000,000
1909	263,000,000	185,500,000	Over 83,000,000

Thus England was using, in 1909, nearly twice as much coal as she had used in 1870. By 1909 also we were selling nearly six times as much abroad as we had done in 1870. Our coal ships from the Tyne, the Clyde, or Cardiff, went all over the world. Northumberland and Durham, South Wales and Lanark, provided their cargoes. Two main causes accounted for this great export. Many foreign nations—for instance, in Spain, in Italy, in South America—wanted coal for their new factories and railways. Secondly, as our trade revived after 1890, our steamers carried more of the world's goods than ever, and to supply their needs, coaling stations had to be established all over the world.

In such good times, colliery owners aimed at producing as much coal as they could. As the older, easier seams were worked out, engineers went farther and deeper underground. To meet the dangers of this state of affairs, legislation became necessary. From 1911 onwards all managers had to keep to the code of rules laid down in the Coal Mines Act of that year. This Act prescribed the percentage of oxygen which must be maintained in the air, in all parts of the mine. The mine needed very powerful ventilation if this was to be accomplished, for in one colliery in Yorkshire there are $2\frac{1}{4}$ miles of coal face, 6 miles of main roads, and side roads bringing the total up to 20 miles; and every horse and every light has to be counted in among the oxygen consumers. In consequence of this Act, collieries must now work as rapidly as possible, as they are very expensive to maintain; and so the haulage and lifting needs to be done by the most powerful machines. Therefore the full coal tubs are now often taken direct from the face of the seam by power, and are propelled to the loading road, or main siding, and thence to the shaft bottom. It is only on the side roads that the horses now pull back the empties. Up the shaft, in cages, go the tubs, hauled still by power, and in some collieries,

the full tubs are removed from the cage and the empties are pushed on by mechanical rams. At Astley Green in Lancashire, in 1913, eight tons could be raised 2628 feet in 60 seconds, and the emptying and reloading of the cage took only about 5 seconds more.

At the pithead also the work is carried on nowadays with far more equipment than formerly. Besides, uses have been found for small coal and coal dust, which in 1870 were mostly wasted. At Barnsley, in Yorkshire, the work at the surface is thus described :

"The great superstructure at the pithead receives from below 300 wheeled tubs of coal an hour. . . . The cage of 3 decks makes 50 draws an hour, the operations of loading, ascending, emptying and descending, occupying practically no more than one minute. The tubs, as they are received are tallied and weighed by the men's delegate or checkweighman and by the management. They are hurried along lines to a kind of cradle in which the tub is inverted so that its contents fall into the screening department below. The empty tub is bumped out by the succeeding full one, and the screened coal is spread continuously in a thin layer on broad travelling belts. Boys carefully look for and pick out the shale and inferior coal from the moving material, hastily throwing it out. . . . After passage through shaking machinery to sift out the nut coal from the small, the latter is picked up by conveyor buckets, and conducted aloft to the troughs of the huge washing chamber . . . and the result is to produce washed coal and 'smudge.'* For the smudge formerly there was only one destination—the pit-hill."

Now, however, at Barnsley and in many other places, the smudge is made into coke. Part of it is also used to feed gas-engines which make all the electricity for the colliery. In the process, tar and ammonia are formed, and chemists employed at the colliery make valuable oils and crystals from them, in their laboratory at the pithead.

In the 'nineties, many mines were well supplied with machinery driven by steam, installed at great cost. But as electrical engineering developed, this new power was applied to mining, and colliery owners, who could afford to install it,

* *This is the very fine coal dust washed off the larger pieces.*

began to use it. Once installed, electricity makes for economy in the working of the mine, and it is cheap to produce from spare waste coal. But every such change means that fresh capital must be spent. Therefore, on the whole, it is now the great companies, like the Cambrian Combine, that do best; lesser pits, owned by men of small means,* cannot be equipped and altered in this expensive way.

The effect of these changes on the lives of the men has varied very much. The actual work of coal hewers, lying in the deep places of the mine, "howking out" the coal, cannot alter much. Yet they are affected by some changes in the general routine. In most districts, the working hours are now shorter. Miners had once opposed the limitation of boys' hours, for fear lest their own work should be curtailed and their wages lowered. Yet after about 1870 they were beginning to want a working day of eight hours only. By 1890, the Miners' Federation, the great union of miners' trades unions, had decided in favour of this plan, and from that time onwards tried hard to induce Parliament to make it compulsory. But it was not until 1908 that they succeeded. This was because the miners of Northumberland and Durham opposed the eight hours' day; it would not fit in with their customary hours of work, and it was longer than the hours that they were actually working, for they had won good conditions for themselves. To other districts, it was a great boon.

Among the men, too, there are other changes. For many years, in charge of each "district" of a mine, there had been a collier, promoted from the ranks, called a deputy. He was responsible for the safety of his men. In 1911 Parliament enacted that each deputy must pass an examination, and hold a certificate. Moreover, the Act laid on the deputy the

* In 1875 many pits in South Wales were still ventilated only by the simple furnace at the foot of an air-shaft.

duty of judging the state of the roof, inspecting the ventilation, and ascertaining the presence of dangerous gas. Thus the modern staff, with manager, under-manager and deputies, all to some extent trained and tested, contrasts strongly with that of fifty years ago.

The vast increase in the making of machinery was rendered possible by the improvements in steel-making which had marked the preceding period.* The Bessemer process brought great prosperity, and Bessemer converters are still in use to-day. Also, by 1880, another method was well established in English works. It is called the Open-hearth or Siemen's-Martin process, and was invented in 1867. As late as 1903, two-thirds of the English steel was made in this way.

But there was one great drawback, both to the Bessemer and to the Siemen's-Martin process. Much iron ore contains phosphorus, and such ores make brittle, useless steel, unless the phosphorus can be driven out. Neither process did this, and consequently, for both, only the pure ores, such as come from Sweden and from Spain, could be used. Ores from Cleveland and from many Continental iron-fields were useless. "There is a fortune waiting for the man who can find out how to dephosphorize iron in the Bessemer process," said a lecturer at the Birkbeck Institute in London, in 1868. Among the students, was a young man named Sidney Thomas, a clerk at Stepney Police Court. In his schooldays at Dulwich College, he had gained a great love of science, and now he attended evening classes, and worked alone in his bedroom, where he had rigged up a sort of laboratory. Impressed by the lecturer's words, he concentrated on the problem of driving out the phosphorus from the iron during the steel-making process. He spent all his holidays at iron and steel works. By 1875 he had guessed that the difficulty

* See Chap. III.

arose because the Bessemer converter was lined with a very cheap, durable brick, which was full of acid in its chemical composition.* Under the intense heat of the air blast, the phosphorus of the ore united with oxygen from the air, and formed phosphoric acid. This met the acid brick, and, as two acids will not combine, the phosphoric acid was driven back into the liquid metal in the converter. Could the converter be lined with some material which would soak up the acid, there would be no more difficulty. Such a material must belong to another great group of chemical substances, the basic substances. Luckily, Thomas had a cousin who was a works-chemist in South Wales, and by his aid tests were made in real converters. At first the new lining bricks provided by Thomas all cracked in the heat, and he spent all his savings on fresh ones made of various basic materials. At last he found one † that held out against the flame, and was, in addition, cheap. The steel made was good; by 1878 Thomas could prove that he had mastered dephosphorization. At first no one listened to him, but in 1879 the manager of the Bülckow-Vaughan ironworks, ‡ at Middlesbrough, was persuaded to install the new converters. If Thomas' claim were well founded, then the Cleveland phosphoric ores would be as useful as the pure ores of Barrow or of Sweden.§ It was not doubtful for long. Very soon, iron and steel makers from all the important regions of phosphoric ores—Yorkshire and the Midlands, Belgium and Germany—were travelling to Middlesbrough to see the new process and obtain the right to use it. It could be employed both in Open-hearth and Bessemer furnaces, and to-day it is used almost everywhere. It has been, so far, the last of the great improvements in steel-making.

* *Acids are substances which combine with substances in another great chemical class, the basic substances, to form salts.*

† *A magnesium limestone.*

‡ *See p. 71.*

§ *See p. 73.*

Its great importance was, that it brought back the poor ores into use. This meant a cheapening of steel, and a great extension of its use. So much additional iron was now needed that, since 1880, we have gradually imported more and more iron ore, until by 1903, nearly half of all that we used was brought from overseas. The invention meant, too, that certain of our own iron-fields leapt forward in importance, and those the very ones which had for a time declined, because of the character of their deposits. Gradually, South Wales, Western Scotland and Cleveland came to be the greatest English sources of supply. In 1903 Cleveland supplied more than one-third of all our native iron ore. The effect can be seen to-day in such a town as Middlesbrough. In 1871 it was a place of 39,000 people. In 1907 it had over a hundred thousand inhabitants. Writing in that year, Lady Bell, the wife of a great iron-master, spoke of the constant stream of workmen who kept coming into the town from other districts, not only in one year, but year after year.

The development of steel meant the decay of the trade in iron goods which had hitherto been centred in South Wales, in Staffordshire, and on the north-east coast. In South Wales it died away, and steelworks sprang up. In Stafford, forge after forge was closed down. On the north-east coast, steel processes began. In 1912 it was said, "The total output of finished iron in the United Kingdom is now what the Midlands alone produced in the 'eighties."

II. THE ACCUMULATION OF CAPITAL (1875-1925)

In this period, the need for capital in industry increased faster than before. Two causes contributed to this; one was the continual introduction of new machinery, the other was the world-wide extension of trade, bringing heavy expenses for transport, advertisement, and agencies.

But between 1875 and 1914, the savings of the nation grew, as the following table shows :

Deposits in Post Office Savings Banks.		Deposits in Friendly Societies.	Deposits in Banks in England and Wales.	
£		£	£	
1881	Over 80,000,000	Nearly 14,000,000	Over	272,000,000
1891	„ 114,000,000	Over 26,000,000	Nearly	428,000,000
1901	„ 192,000,000	„ 43,000,000	Over	633,000,000
1907	„ 209,000,000	„ 57,000,000	(1910) „	776,000,000

joint stock
People wanted interest on these savings, and were ready to invest money. Since 1862, under the Law of Limited Liability, joint-stock companies had been a fairly safe form of investment. For this law limited the responsibility of each shareholder to the amount of his share, provided that the company were duly registered. Hence there was a great increase in the number of joint-stock companies. Whereas, in 1863, only 689 new ones were formed, after 1900, over 4000 were registered almost every year. Small firms, belonging to one family, or to a few partners, still sprang up, it is true, and there are many private firms at present. But the limited liability company has become gradually the most usual form of enterprise.

of firms and companies became cheaper
This increase of companies helped to make goods cheaper, because the companies paid their shareholders in dividends, and these were usually at a lower rate than would have satisfied private owners, risking their whole fortune. Besides, in each industry, there was hot competition between the numerous firms. Sometimes, makers were so eager to sell that they accepted the very smallest profit. Indeed, often they could not afford to stock their works with the most recent machinery.

To meet the constant lowering of prices, manufacturers were driven to two expedients, from about 1895 onwards. In the first place, managers and directors sought for economy.

But often they were paying others for certain steps in their manufacture, and the profits on those steps could be saved if they took over the whole process themselves. For instance, in 1850, and long after, in the making of steel goods, each process on the steel ingot was in the hands of a separate firm. At Sheffield, rolling, tilting, and shearing, occupied three separate groups of owners; and steel goods could only be made up by those who had paid an owner from each group. But after 1875, under the pressure of the need for economy, many manufacturers and companies reverted to an older form of ownership, which had been characteristic of much earlier times. This was the form in which one employer or firm carries on all the processes required in the making of the product, from beginning to end.

This plan forms a great contrast to the minute specialization of ownership characteristic of the earlier period of the Industrial Revolution. Messrs Bülckow-Vaughan began their works at Middlesbrough,* in 1831, merely as iron-smelters. But to-day they undertake every single step in the making of steel goods, from the mining of the ore to the despatch of steel rails or plates. Instead of buying coal from other owners, they have obtained collieries of their own; instead of buying machinery from engineering firms, they have foundries and shops of their own, where they make all their own machines and engines of every kind, for iron-mine and mill and coal-pit. Instead of buying limestone, to provide the materials for the Thomas process, they are themselves quarry masters. In the iron and steel trades in particular, this sort of union of works has become fairly common since about 1895.

The second expedient adopted by manufacturers was the revival of an older arrangement. About 1890, English traders in some industries were competing against one another

* See p. 71.

so closely that their profits were almost nothing. This was the case in the South Wales coal trade, and very many owners saw that if they all agreed together only to produce a certain amount of coal in the year, they could keep the price from dropping to the lowest sum any hard-pressed owner would take. They did not wish to force the prices of coal up so high that no one would buy it; they wanted to keep it at a level which gave a moderate profit. Hundreds of years before, in the Middle Ages, all trade had been carried on on this plan of the "fair price," fixed by the masters in their guild or by the mayor of the town. Moreover, in the coal trade, just this plan exactly had been carried out for years by the owners of the Tyneside collieries. They used to arrange the output for each colliery, and the prices to be charged, periodically. This agreement was called the Newcastle Vend, and it had ruled the northern coal trade from 1787 to 1844, when it finally broke down. In 1896 Mr. Thomas* proposed to the South Wales Coalowners' Association, that they should all agree together to limit their output to an amount estimated; but the more conservative coalowners would not agree to do it. Just about the same time, most makers of sewing thread did actually amalgamate with the great firm of J. & P. Coats, and the combined firms have secured nearly a monopoly of the sales of sewing cotton. Such unions are called "Trusts" or "Combines."†

Trusts are greatly dreaded by most English people, for they fear that any monopoly will gradually raise prices. In America, combines have proved very dangerous and powerful. Yet, in the years before the War, not many trusts had taken firm root in English trade, and the danger was not seriously

* Later, Lord Rhondda.

† Other examples are to be found in the Bradford Dyers' Association, made in 1897 by the union of thirty-five businesses, in the metal trades, and in the tobacco trades.

felt. Since the War, there have been many amalgamations of firms.

Even before the War, however, some combinations were beginning to leap over national boundaries, and became world combines.* But as the organization of capital becomes world-wide, so, too, must the organization of labour. This is being attempted in one branch of the League of Nations the International Labour Organization. Delegates representing both employers and employed, from each country belonging to the League, meet annually, and try to reach agreements which shall be enforced in all the lands. In 1919, they tried to obtain the assent of the thirty-nine states from which they came to rules limiting the work of women and children, and reducing men's hours. It may be that such understandings, enforced, as they are bound to be, by all the States of the League, may give labour international cohesion and strength. For while trade and its great organizations pass fully into world-wide activity, labour cannot stay behind.

III. THE LIFE OF THE WORKER (1875-1925)

During this period, profound changes came about in working-class life. In the first place, the workman was more than ever before in danger of accident. In 1897, 40,000 accidents were reported to the factory inspectors, and new classes of workers were constantly coming into the danger zone. In case of accident men needed help, and in 1875 some only of the trade unions provided it, for it was costly. In 1876 George Howell proved to a Committee of the House of Commons that the sums paid for accident insurance constituted a heavy tax on the men's earnings.

* For instance, in 1902, the great English Tobacco Combine, the Imperial Tobacco Company, united with the great American Combine, the American Tobacco Company. The tobacco trade of the world is largely controlled by this huge alliance.

The Amalgamated Society of Engineers had paid £25,000 in twenty-five years, although the increasing danger actually forced the men to be more careful. A generation earlier, hardly any unions had put by any money at all against accidents. In two ways, however, the workmen are now better protected. First, there are now many more inspectors of factories and workshops than there were in 1875. Secondly, the law has given the workman a definite claim to compensation for accidents. Until 1880, he had no real chance of compensation from his employer except in the way of charity. In 1880 an Act gave him power to sue the master, but this was so costly, that few workmen undertook it. So in 1897 in certain trades * employers were made responsible, to the extent of having to pay half wages for all accidents. But many small masters simply could not pay the legal compensation, and others were very unwilling to employ any but quite young, vigorous men. Yet the Act gave the men a real chance to get their compensation, and was not on the whole found ruinous by employers. In 1906 a fresh Act enabled almost every kind of worker to claim compensation.

*5 killed
14 m.
sharp
reduction*

The coming-in of machinery wrought a great change also in the relation of the skilled worker to the unskilled. Formerly there had been a sharp separation, and often even hostility, between the two. This spirit survived in some trades, for instance, in the Tyneside shipyards, in the 'nineties. But in most a change crept in after 1875. In the new transport services, there were numberless jobs for the unskilled. In factories the machines were often worked by a team of skilled and unskilled men working together. Small machines were often managed by a man who was only a labourer. These men became "semi-skilled," and even the engineers, "the aristocracy of labour," recognized their existence.

* Railway, factory, and laundry work, mining, engineering, and building. To these agricultural work was added in 1900.

Thus the labourers were falling into distinct grades. In the building trade alone, bricklayers' labourers, masons' labourers, plasterers' labourers, and painters' labourers were really specialized men, often with much skill. Yet they suffered from the fact that their wages were not enforced by a union, and so varied in amount, even from one firm to another. In 1900, however, many a semi-skilled man lived in the same sort of house, on about the same income as his skilled neighbour. Moreover, he could shift from one trade to another, a thing no skilled man could do.

About the year 1900, life among the most prosperous artisans was very fairly comfortable. A certain foreman, for example, living in York,* earned 38s. a week. He was married, and had six healthy children, the eldest just about to leave school, the youngest just old enough to begin it. This was the most expensive time in family life, and yet this family lived moderately well.

"The house contains four rooms, the front door opening straight into the parlour. The yard and sanitary convenience at the back are shared with one other house, but there is a water tap and sink in the kitchen. The rent is 4s. a week. The family have plenty of good food. The goods are brought in at the end of the week, and Mrs. P. makes her own bread."

Breakfast nearly always included bacon; at dinner, there was meat and pudding for all; for tea, Mrs. P. often made cakes and scones, and for supper she cooked a bit of fish, or some other relish. Occasionally they all had fruit. It was the coming of imported meat, and fruit, and the cheapening of imports such as tea and sugar, that made such house-keeping possible. Moreover, a family like the P.'s often managed a week's holiday away from home, during the year. Except for this, however, life was less rich in cheap amusements than it is now. Plays and theatres had grown very

* Described by Mr. S. Rowntree in *"Poverty: a Study of Town Life."*

dear, and even as late as 1913 there were very few cinemas, and few gramophones and no wireless receivers.

Illness, or lack of work, could break up this prosperity. Employment also was very uncertain. It was still true in many trades that the foreman engaged a man, and could discharge him at the end of the current week. In the London building trade, in 1895, there were actually skilled jobs which could be ended by an hour's notice on either side. One London carpenter had made seventy-nine changes in 32 years. Indeed, for carpenters constant change was almost a tradition of the craft. When out of work, the skilled worker in 1900 had only his trade union allowance to fall back on. Illness, too, even if it were not the wage-earner who was ill, meant a drag on the income, and debt. One woman, who had five children and a fairly steady income of 35s. a week from her husband, had been ill a great deal. She summed up her life thus :

"So here I am, a woman of forty-one years, blessed with a lovely family, faced by a big deficit, varicose veins, and an occasional loss of the use of my hands. I want nice things, but I must pay that debt I owe. I would like nice clothes (I've had three new dresses in 14 years), but I must not have them yet. . . . I am doing it slowly, but surely, and my heart grows lighter." *

On earnings of about £1 a week for four or five people, there was real poverty. This £1 wage represented, roughly, the work of the unskilled man who was not of the highest, specialized class. In the towns, very rarely did such workers have more than three rooms. As for food, bread and tea were the standing dishes for breakfast, tea and supper, with occasional bacon, eggs or kippers ; a few women bought a daily "ha'ppoth" of fresh milk, but condensed milk was to be found in each home. Many a wife managed a joint for Sunday dinner, and made out with bacon or cheap meat

* From "Maternity," published by the Women's Co-operative Guild.

"pieces." Expenditure on clothing was very, very limited. Usually money for clothing had to be taken off the house-keeping allowance. One very capable woman described how she bought her clothes at jumble sales, or from the rag and bone man, who would sometimes take rags and bones instead of money. Then she unpicked, washed and remade the stuff into dresses and coats for the children. To such a woman a parish or chapel clothing club was a real help.

Below this class came the family of the casual labourer, living in utter poverty, in filthy, stinking, overcrowded houses, feeding mainly on bread and tea, and dressed in clothes which had never been made for them, and which were worn year after year, until they grew dirty, threadbare, and disreputable. Lower in condition than even these occasional workers, were those vagrant people who lived on the very margin, and seemed unable to do any work at any time.

Thus, there were many grades of working-class life, and a moderately comfortable condition extended fairly widely. In 1885, Sir Robert Giffen calculated the wages of all adult men wage-earners as follows :

Under	10s.	a week	0·2	per cent.	
Between	10s. and 15s.	"	2·5	"	
"	15s. and 20s.	"	20·9	"	
"	20s. and 25s.	"	35·4	"	} £1 a week and above 76·4 per cent.
"	25s. and 30s.	"	23·6	"	
Above	30s.	"	17·4	"	

When Mr. Seebohm Rowntree made his inquiry into working-class conditions in York in 1899, he grouped the working-class population by incomes as follows :

Under	18s.	a week	4·2	per cent.
	18s. to 21s.	"	9·6	"
	21s. to 30s.	"	33·6	"
Over	30s.	"	52·6	"

The value of income depends on the amount of goods that can be bought with each shilling. These goods, and not the mere cash received, represent the "real wage" of a

worker. In 1900, money wages in most trades had been rising for some time, as the following table shows. The average money wage paid in 1900 in each trade is represented by the figure 100, and the rates paid in other years are compared with this.

MONEY WAGES, 1880-1900.				
	Building trades.	Coal mining (Hewers).	Engineers.	Cotton operatives.
1880	85.5	61.45	88.05	89.78
1890	86.6	85.85	92.62	95.12
1900	100	100	100	100

While the money wages were rising, their real value was increased because most articles of food and clothing had become cheaper. This decrease in prices went on until 1895. In 1880, in London, the quartern loaf cost $7\frac{1}{2}d.$, in 1890, $6d.$, and in 1900, only $5\frac{1}{4}d.$ Sugar, too, cost $3d.$ a lb. in 1880, and $1\frac{3}{4}d.$ only in 1900, and tea and meat and many other things had fallen in price as well. But by about 1902, a great change was becoming noticeable. With the coming of the 20th century prices began to rise. For example, by 1910 the quartern loaf had risen to $5\frac{3}{4}d.$, and bacon cost about a third more than it had done in 1895. One woman, looking back to about 1896, said, "I could then obtain one dozen pounds of sugar for $1s. 9d.$, now it is $4s.$, and this applies to many things." By 1913, retail prices were about 12 per cent. higher than the old prices of 1901.

In many trades, wages were still rising, but now very slowly. In 1913, as far as could be known, the average of wages was about 9 per cent. above the rates of 1901. Thus the cost of common food had increased faster than worker's earnings. The men in many of our great industries realized, too, that while they were thus pinched, business was very good and their industry prosperous.

In 1914 the outbreak of the Great War altered the whole of world trade, and almost immediately began to affect

H

prices, which rose rapidly. Some instances are shown in this list :

	July, 1914. per lb.	March, 1920. per lb.
Imported beef ..	6d.	1s. 3½d.
Bacon	11½d.	About 2s. 4d.
Tea	1s. 6½d.	About 2s. 10d.
Sugar	2d.	8d. or 9d.

Clothing rose in cost, and the following list shows some changes :

	1914. s. d.	1918. s. d.
Men's flannel shirts ..	4 6	8 2½
Men's working boots ..	10 10	21 7
Women's stockings ..	1 8	3 8
Women's boots ..	11 6	22 4
Boys' shirts ..	2 6	4 0
Children's socks ..	9	1 10

Prices went higher yet until 1920.*

While food and clothing were growing more costly, coal and gas, travelling, necessary household supplies such as soap and matches, and even amusements and newspapers, were rising in price. Of the main kinds of working-class expenditure, only rents remained nearly at the pre-War level. This was only because, in December, 1915, the Government, in the Rent Restrictions Act, forbade the raising of rents of working-class houses, and enforced this law effectually.

The cost of food and clothing, fuel and rent, and the lesser items of insurance, travelling, repairs, and a few other things, make up "the cost of living." Between 1914 and 1920, the cost of living rose to an extraordinary degree. The average rate of wages also rose, but as long as the War lasted the wages did not keep quite abreast of prices. After

* The spring of the year 1920 was the dearest time. The causes which raised prices during the War were still at work; these were the general shrinkage of output of food and materials all over the world, the expense and difficulty of world transport, and, more important than either of these, all the difficulties of exchange between one country and another, due to technical money changes. With peace, too, came the cessation of much well-paid emergency work, and of Government subsidies and restrictions.

1918 the rise of wages exceeded that of prices. These facts the following table shows. In either column, the figure 100 represents the rates of 1914 : *

Year.	Cost of living.	General average of wages.
Period of rising prices. { 1914	100	100
1915	120	105-110
1916	135	115-120
1917	160	135-140
1918	180	175-180
1919	185	210-215
1920	220	260
Falling prices. { 1921	210	264
1922	186	197
1923	165	176

Thus wages have kept on the whole somewhat ahead of prices, for those who have had full wages and full-time work. But since 1921 very many families have not had the benefit of this, owing to the terrible shortage of employment which set in in that year.

The War period, with all its fluctuations of prices and wages, has passed. Wages and prices alike have fallen somewhat. But one significant change seems to have taken place. During the War it was the wages of the poor and less highly skilled workers which rose most. Every man who did not serve in the forces was needed for munition work, for transport, and for farming; regardless of their skill, therefore, all men, except farm workers, were well paid. The wives of the fighting men received separation allowances which they were free to spend. There was, moreover, no unemployment whatsoever. The result of this was that,

* These figures are taken from "Prices and Wages in the United Kingdom, 1914-1920," by Professor Bowley, and from his article in "These Eventful Years," edited by F. H. Hooper for the Encyclopædia Britannica Company. He makes certain changes in the figures of the Ministry of Labour, because he thinks money is now spent in different proportions on the items.

in spite of the food shortage, for six whole years the children of the poorer workers were better clothed and better fed than those of any previous generation. Before the Royal Commission on food prices, in 1925, working-class women told how their menfolk were no longer satisfied with sloppy stews, but wanted good meat and vegetables. Thus the struggle for the working-class woman is not easier than it was, for she has a double difficulty; wages are falling and she herself has better ideas of nourishing food and good clothing. But this is surely a change for the better. It should rear for England a stronger and healthier race.

BOOK LIST

See list given for Chap. V.

Author.	Book.	Publisher.
Anderson, Dame	Women in the Factory ..	Murray.
Ashley, W. J. ..	British Industries	Longmans.
Bell, Lady ..	At the Works.. ..	Nelson.
Booth, Charles ..	Life and Labour of the People of London. (Industry, 5 vols.)	Macmillan.
Bowley, A. L. ..	Wages and Prices in the United Kingdom, 1914— 1920	Clarendon Press.
Hooper, F. ..	These Eventful Years ..	Encyclopædia Britannica Co.
Jeans, W. T. ..	Creators of the Age of Steel	Chapman & Hall
Knowles, L. C. A.	The Industrial and Commer- cial Revolutions in Great Britain during the 19th Century	Routledge.
Rhondda, Lady..	Life of D. A. Thomas, Vis- count Rhondda	Longmans, Green & Co.
Welsh, J. ..	The Underworld	Herbert Jenkins.
Williams, A. ..	Life in a Railway Factory	Duckworth & Co.
Parliamentary Papers	Reports of the Royal Com- mission on Labour, 1891— 1894	H.M. Stationery Office.

The Victoria County Histories (Constable & Co.) give articles on the special industries of each district.

CHAPTER V

INLAND TRADE AND TRANSPORT

I. RAILWAYS

IN the period of great inventions, between 1760 and 1820, England had been covered with a network of canals and of engineered high roads. The slow barge, and the heavy road wagon had carried the inland trade. We have now to show how these were superseded by the railway. Two inventions brought this about. The first was that of rails, along which in early days horses pulled trucks. At coal-mines such rails had long been used, and now "railroads" were being laid down, sometimes as competitors of the canals. The second invention was that of the steam locomotive. After many experiments, George Stephenson had perfected the locomotive engine, and since 1816, the first "railway engine" had been hauling wagons at Killingworth Colliery, near Newcastle.

The first real "railway" in our sense of the word was the Darlington and Stockton Railway, opened on September 27th, 1825. It was intended mainly for a goods line, to be traversed by horse-drawn trucks, as well as by wagons drawn by an engine. It was a public track, which any one might use on payment. For eight years after 1825 colliery owners sent their own horses and trucks along the track. But the drivers often forgot to light their lamps at dusk; sometimes, as they jogged along, they fell asleep, and sometimes they left horses

and trucks standing on the line while they went for a drink. In 1833, tired of accidents and quarrels, the company undertook the entire haulage. Henceforward, they used steam engines only.

A change, too, took place with regard to passenger traffic, between 1825 and 1833. On the opening day in 1825, forming part of the first train, was one "coach" for passengers, owned by the company. It was built and painted just like a road coach, but had grooved wheels which fitted the rails. Any one might run such a coach along the track, on payment of tolls. The company's coach plied to and fro, drawn by one horse, between Darlington and Stockton. It bowled along faster than the four-horse mail coach, and the fare was but 1*d.* a mile. The company's directors never thought that passenger traffic would pay very well; but soon there was need for a second coach. Then, in 1826, a woman innkeeper began to run another, and next, a Darlington man followed suit. Before long, seven coaches were running. All charged low fares, and made profits. The directors saw that passengers were actually increasing monthly. In 1833 they bought out all the private coach-owners. Then they sold the horses, and used only engines for passenger trains.

The Darlington and Stockton Railway had opened on the old-fashioned plan. The first railway to aim at passenger traffic from the start was the Liverpool and Manchester line, designed by George Stephenson, and opened in 1830. From the first, passenger trains ran regularly as well as goods trains. In 1831, over 256,000 people travelled by the trains in six months. The trains were drawn only by the company's engines. For these reasons, it may be called the first really modern railway.

From 1830 onwards, throughout the 19th century, the railway lines of England were extended in all directions. The following table illustrates their growth :

Year.	Length of line open, in miles.	Year.	Length of line open, in miles.
1830	69	1870	15,537
1840	1,331	1880	17,933
1850	6,621	1890	20,073
1860	10,433	1900	21,855
		1920	About 24,000

This table shows how the years from 1825 to 1843 can be called the first railway-building period. From 1844 to 1870 was the time of greatest growth, when our present system was mainly made. From 1870 to the present day, came the time of smaller additions and slower extension.

In the first period, each district built a line for its own needs, and very short it often was. In 1851 only two of all our railways were over 100 miles long. The Great Western had $118\frac{1}{2}$ miles of track, the London and Birmingham had $112\frac{1}{4}$. Eighteen companies had less than 20 miles each. The London and Blackwall, the London and Greenwich, and the Durham Junction Companies had less than 5 miles apiece. To get from London to Manchester, a passenger had to change four times, and the trains on the four lines did not fit in well. Moreover, whole counties and groups of counties were quite untouched by railways. The lines were gathered for the most part round the Lancashire and Yorkshire towns, and round the Durham coal-fields and coal-ports. Each line, moreover, was planned to run along the route that was easiest to engineer. Even George Stephenson took a valley route if he could; he made the main line of the Midland Railway pass some miles from Sheffield, which remained on a side line until 1864. Yet, in spite of all inconveniences, people used the trains. In 1845, the railways earned £2,300,000 by carrying goods, and nearly £4,000,000 by carrying passengers. Many companies had earned 10 per cent. profit.

In the early days, a railway journey was a real adventure.

Trains were very unpunctual, and at small stations it was difficult to find out the time of the start. On many lines, a time was fixed for the departure and arrival of a train at the termini, but along the route it went as it could. The Darlington and Stockton Railway published a time table from the first, but it took years of practice before the trains ran to time. Moreover, minor mishaps were very frequent, and



FIG. 15.—A Train on the London and Birmingham Railway, 1837.

From W. Trotter, "Topography of the Country Thirty Miles round London," 1837.

The train is leaving London for Birmingham. The picture shows the dangerous seats for guards, outside the carriages, in imitation of the coach-guard's seat.

often the carriages were too heavy for the low-power engines. Even a strong head wind often made a train late.

The carriages were very different from ours. Herbert Spencer, who was an engineer's apprentice in 1837, described them thus :

"The first-class carriages were as nearly as might be made to represent three coachbodies joined together. . . . Every first-class carriage had a guard's seat outside at each end, an arrangement which did not cease until a guard was killed by collision with the arch of a bridge. The second-class carriages were intended to simulate the out-sides of coaches as much as was practicable."

The grandest way of travelling was to sit in your private carriage, which was securely tied on a truck. Some lines, like the Liverpool and Manchester, took no third-class passengers. Those companies which did, shunted them into sidings to let every other sort of train pass, and gave them poor accommodation. The third-class carriages were at first open trucks or wagons. Gradually they improved; by 1845 there was a covered third-class carriage, rather like the present van "to hold 8 horses or 40 men." But the "thirds" had no buffers, whereas all first and most second-class carriages had them after 1840.

Railway travel was at first exceedingly unsafe. Even in 1841 it was not unusual to dispatch a train without any brakes. Generally, there was a brake on the tender, and one on the van of the guard or "brakesman." Often the brakes had to be applied so violently that sparks flew from the wheels, and Stephenson once saw a brakesman flung clean out of the window of the van.

As for signalling, for the first ten years or so it was done by hand. "Policemen" were posted along the line, and at all switches and points. They wore top hats, light trousers, and swallowtail coats. They signalled with flags by day, and with lamps by night. Except from his nearest policeman, a station-master knew nothing of the trains on the line. News could only be passed along by these men, or carried by "pilot engines." A policeman was not easily seen from a distance, and in windy weather, his flag sometimes became "a mere string." In fogs, neither flag nor man were seen at all. When there was fog between London and Greenwich, the signalmen were posted so near together that they could hear one another talk. Safety depended largely on these policemen. If they misunderstood, or muddled their signals, an accident was very likely.

Another main cause of disaster was the lack of strict



George Philip & Son, Ltd.

The London Geographical Institute

MAP II.

time-keeping. The men had never worked before at any trade in which minutes and seconds mattered so much. Accustomed to leisurely ways, they could not suddenly change their old habits. Even when they had clear instructions, they were often careless, not realizing the dangers of mechanical power. In 1848 a passenger train used to pass Dunfermline Junction at 8.16 a.m., and a goods train waited in a siding until it had passed. One morning the driver of this train thought he had time to move before 8.16.

"Neither engine driver nor stoker knew the time, nor in fact did any present . . . know what o'clock it was. The signalman was absent from his post, and the pointsman, on being asked what time it was, stated that he did not know."

Naturally, a bad accident followed.

Lastly, there was great difficulty in getting suitable men as engine drivers, firemen, and signalmen. Apart from a few colliery men in the north, no workmen had experience of locomotives, and there were very few people to train new men. On one occasion when all the drivers at Rugby were out, the foreman sent out as a driver a fitter who had stoked for a few months, and the result was a collision. On another line a fitter was sent out about twenty times with a good driver, then he was given charge of expresses, and was driving the York mail when it dashed into another train.

Railway travelling impressed people very much. Creevey thus describes a trial trip on the Liverpool and Manchester Railway in 1830.

"The quickest motion is to me frightful, it is really flying, and it is impossible to divest yourself of the notion of instant death to all, upon the least accident happening. It gave me a headache which has not left me yet. Sefton is convinced that some damnable thing must come of it. . . . The smoke is very inconsiderable indeed, but sparks of fire are abroad in some quantity; one burnt Miss de Ros' cheek, another a hole in Lady Maria's silk pelisse, and a third a hole in some one else's gown. I am extremely glad indeed to have seen this miracle, and travelled in it, but I am quite satisfied with my first achievement being my last!"

Another gentleman, Crabbe Robinson, travelling on the same line a year later, wrote :

" If all the seats had been filled, our train would have carried about 150 passengers, but a gentleman assured me that he went with 1000 persons to Newton Fair . . . and Bills have passed for making railroads between London and Birmingham, and Birmingham and Liverpool ! What a change it will make in the intercourse ! One conveyance will take between 100 and 200 passengers, and the journey will be made in a forenoon ! "

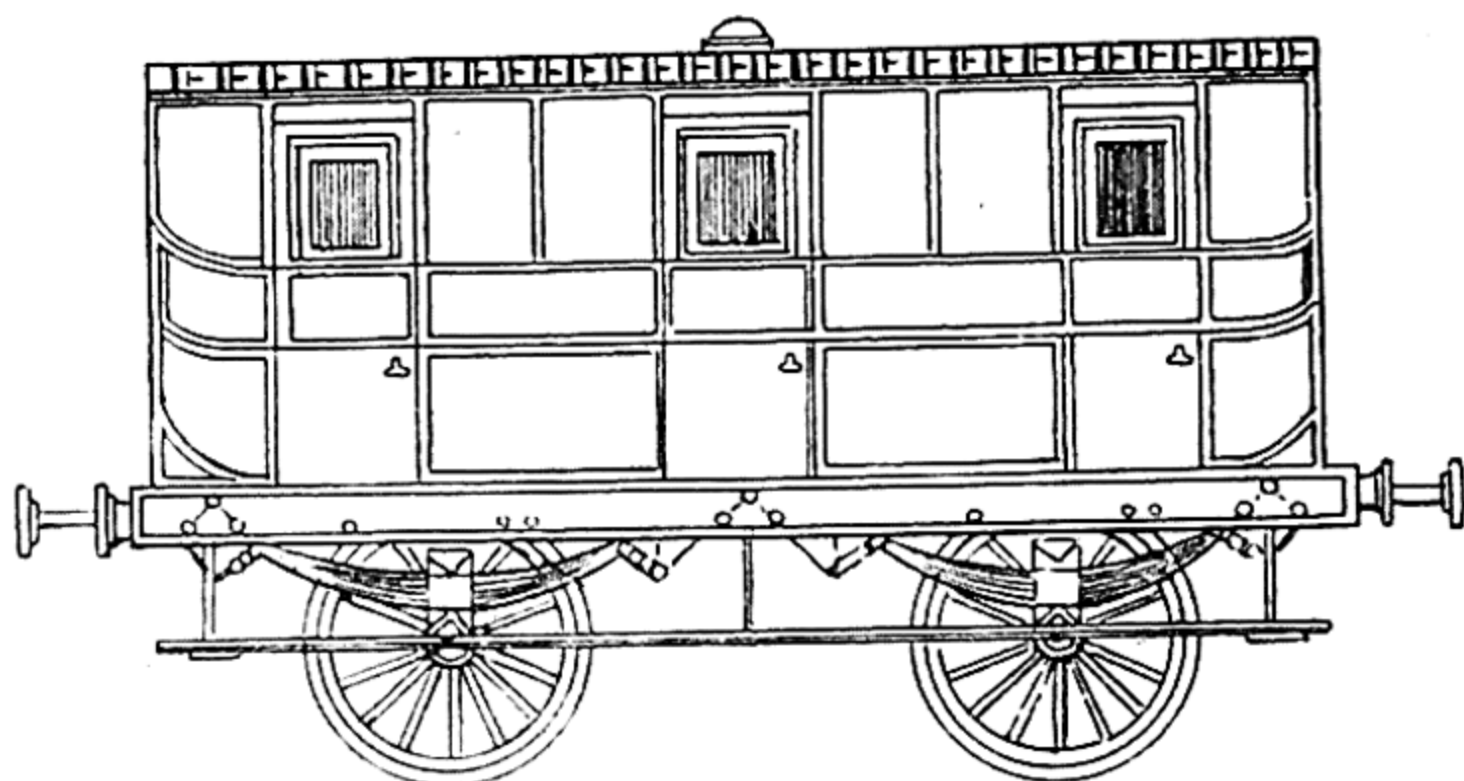


FIG. 16.—A First-Class Railway Carriage, 1848.

From " Railway Appliances," 1848.

The design shows the effort spoken of by Herbert Spencer to make the carriage as like a road-coach as possible.

In 1842, Robinson wrote of his journey from London to Lancaster,

" This railway travelling is delightful ! and very economical. We made the journey for four guineas each, and in between 16 and 17 hours. A few years since it was usual to be two nights on the road, and incur double the expense."

An amusing illustration of the attitude of the public is given in the following " Rules for Railway Travelling," published in 1859.

" *Rule 1.*—Never attempt to get into or out of a railway carriage when it is moving.

" *Rule 2.*—Never sit in any unusual place or posture. On some lines of railway seats are provided on the roofs of the carriages.

These are to be avoided. . . . If a second-class carriage, as sometimes happens, has no door, (passengers) should take care not to put out their leg.

“Rule 3.—It is an excellent general maxim . . . to remain in your place without going out at all until you arrive at your destination.

“Rule 9.—Beware of yielding to the sudden impulse to spring from the carriage to recover your hat which has blown off, or a parcel dropped.

“Rule 12.—If you travel with your private carriage, do not sit in it on the railway.* Take your place in one of the regular railway carriages.”

The second great period of railway construction covered the years from 1844 to 1870. The miles of line increased from about 2000 in 1843 to over 15,000 in 1870. Whereas the railway map of 1846 looks very unfamiliar, that of 1878 is almost the same as a railway map of to-day. (See Maps II. and V.) In this period, indeed, both systems and trains became much the same as they are to-day.

In 1845 and 1846 there was an outburst of railway speculation, caused by the prosperity of railway companies.† Promoters planned thousands of miles of line. One group of shareholders at one meeting decided to spend £10,000,000 on new routes. Hundreds of such projects were afterwards abandoned, and many people lost their money. But much building was actually carried out, and the foundations of the great trunk lines were laid.

Between great towns, such as London and Manchester, there was already through communication over several of the short, local lines. The difficulties of such travel were described thus in 1844 :

“Where a great line of communication is broken up into several links, each in the hands of an independent company, the through passenger is not only exposed to loss of time and inconvenience, but frequently to the pecuniary loss of having to stay at some stage of his journey for several hours, or proceed by a more expensive class. To

* Because a flying spark might set it alight, or the lashings might slip and the carriage fall off the truck.

† For a vivid account, see Herbert Spencer's “Autobiography,” Vol. I.

take an example, the London and Birmingham Railway Company runs seven trains . . . with second-class carriages each way daily, but the Grand Junction only runs two mixed trains of which one leaves Birmingham at 6 in the morning, and the other (leaves) Liverpool at 4.45 p.m., being respectively too late and too early to form links in the through communication. . . . At least 75,000 persons annually who would wish to travel by 2nd or 3rd class carriages are compelled by the arrangement of the Grand Junction to travel first-class."

For such difficulties, the solution was amalgamation of the independent lines ; and it was in the time of the railway mania that many lines united with rivals. For instance, the North Midland Railway, with nearly 73 miles of line, and the York and Midland Railway, with 27 miles, both served the same district. By 1843, the rivals had united, and had also leased the Leeds and Selby Railway. Fortunately, George Hudson now became their chairman. Originally a linen-draper, he had turned to railway interests. He, and a few others like him, were now forming visions of great trunk systems in place of tiny local lines such as he saw in Durham and Yorkshire. He induced the York and North Midland to unite with the Hull and Selby Company, and with the Whitby and Pickering Company. Thus he controlled traffic running through Yorkshire from east to west. Northwards from York to Newcastle ran the Great North of England Railway, and it had junctions with the lines of five other companies.* Hudson brought all these together under the name, "The York, Newcastle, and Berwick," and for the first time there was a clear run from York to the border.

Long after the railway mania was over, amalgamations went on. Fearing monopolies, Parliament made it difficult for railways to unite. Yet they managed to do so, because amalgamation usually meant better service. In 1854, Hudson's two companies, the York and North Midland, and the York, Newcastle, and Berwick, united under the name of

* One had only $4\frac{1}{2}$ miles of lines.

the North Eastern Railway. Ten years later, the development of the Cleveland iron-field caused a demand for better railway service along the North Yorkshire coast. Four local lines, including the famous Darlington and Stockton Railway, became part of the North Eastern (1862-1865). Every great trunk line has been built up in a similar way. But whereas in the 30 years before 1880, nearly 12,000 miles were laid, in the 30 years after, the total was only about 5,000 miles. By about 1890, railway construction on a large scale had come to an end.

It was in this second period that carriages and engines became fairly modern in design. By 1870 also, the main present-day appliances for safety and punctuality were in use. To make signals more visible, the "semaphore" came in,* the wooden frame with movable arms and coloured lamps, such as we use now. The arms were worked by hand-levers. But by 1854, these were old-fashioned, and at most junctions there were still taller signal posts connected by wires with signals outside the station. These wires were worked by levers which were all housed in the signal-box, then quite a new thing.

More than any other device, the electric telegraph made for safety. Railway companies were the first people to use telegraphy at all. By 1848, 1300 miles of telegraph wires had been put up along railway tracks. In 1854, an expert in electricity wrote :

"In the management of railway business, the telegraph has become indispensable. Notices of passing, starting, and arrival of trains, are transmitted from station to station. Station masters are in the common habit of saying, 'I just saw the train pass such and such a station,' fifty miles away perhaps, when in reality all he saw was the deflection of the needle of the telegraph."

Thus officials knew exactly where the trains were, and very soon on the lines equipped with the telegraph, accidents decreased.

* It was in use on three lines by 1845.

As the railways developed, they killed the passenger traffic by coach along the roads. Thus the post office was forced to send the letter bags by rail. With the passing of the coaches, the life of the high road lost its vigour. In and about 1870, middle-aged people looked back to their early memories of travel, and they seemed to belong to another age.

"Five and thirty years ago, the glory had not departed from the old coach roads; the great roadside inns were still brilliant with well polished tankards, the smiling glances of pretty barmaids, and the repartees of jocose ostlers, the mail coach still announced itself by the merry notes of the horn."

So wrote George Eliot in 1865. In 1887 Thomas Hardy spoke of the state of the roads as he saw them :

"The physiognomy of a deserted highway expresses solitude to a degree that is not reached by mere dales and downs, and bespeaks a tomblike stillness more emphatic than that of glades and pools."

For twenty years after Hardy wrote, the old highways were to bring hardly a trickle of life into the villages.

During the years of railway construction, while roads were growing silent and empty, canals suffered too. The first period of railway building brought fierce competition between railway and canal. Soon, thanks to the speed and hauling power of engines, railways got the upper hand. Railway directors fought canal companies in every possible way. At present above one-third* of English canals are controlled by railways, and most passed into that control before 1847. Some railway companies bought up rival canals, and forthwith regulated them to make them useless. Sometimes they raised canal tolls above railway rates, thus practically closing the canal. If purchase were impossible, a railway company could sometimes cut off the traffic on a canal by buying another one linked with it.

Even the canals which were not absorbed or directly injured by the railways, suffered. Our country is a land of

* 1910. *Of 3639 miles of waterway, 1360 are controlled by railways.*

varying levels, and so our canals have on the average one lock in $1\frac{3}{4}$ miles, whereas there are but three locks on the whole route from Hamburg to Berlin. The care of locks, weirs, and embankments could not be cheapened. More serious still was the lack of co-operation between the canal companies. They never had a man like Hudson to persuade them to amalgamate, and they remained separate.

On the whole, the decline of the canals has continued. They were surveyed by a Royal Commission between 1906 and 1910, and the reports showed that in the southern and eastern counties there is hardly any traffic, that in the Midlands it is diminishing, and that only on some of the northern canals does it count for anything.

II. BANKING

Bank buildings and bank officials are familiar to us, but their use is not always so clear. It is threefold. First, the bank guards savings deposited with it. Second, it issues notes and accepts cheques, and thus gives an easy way of making large payments. Thirdly, it lends money. In all these ways, it makes business easier and more safe.

In 1830, business men still made their payments mainly in cash. An old Gloucester merchant wrote of a time as late as 1855 :

“ Traders and dealers carried their cash in pocket book or little bag. . . . The country millers (many of them could only with difficulty write their names) never produced a cheque, but notes or coin were drawn out of capacious pockets—sometimes a good deal of silver money which had been received, and couldn't be changed for gold.”

Until about 1850, the Government did not coin enough gold and silver for the needs of the nation, and hence people could only collect cash for large payments with great difficulty. The only substitute for coins was a “ Bank of England Note.”

These could be exchanged for gold at the Bank in London, and they commanded complete confidence.

In far-away districts, bank notes, though needed, were hard to get. Fortunately, long before 1830,* individuals had set up as bankers in the provinces. For instance, about 1770, in Gloucester, James Wood began keeping a chandler's shop. It was a dark, small place, and he served behind the counter, but in time he employed two shopmen as well. People talked about his meagre housekeeping, his endless work hours, and solitary life, but all agreed as to his absolute honesty in money matters. In his little shop, on market days, came the farmers handing fat money bags over to him for safe keeping. By 1800, he was issuing "notes." They resembled Bank of England notes. On a slip of tough thin paper was printed,

"I promise to pay to the Bearer the sum of Two Pounds on demand, value received,

"Signed for James Wood,

"_____."

In the space, James Wood wrote his name. In and round Gloucester these notes were used as freely as golden sovereigns, and his bank was as well known in the West as the Bank of England.

A similar example was a private bank which grew up in Nottingham after 1800. There was a draper, Smith, more pleasant than Wood, and as honest and trustworthy. His shop was visited by the farmers' wives on market days, and in the afternoon the husbands met their wives there, and left their money rather than face the risk of driving home with it. Because he held these deposits, Smith was able to issue notes, and these were used in Nottingham and around it just as Wood's were in Gloucester. Smith's shop became "Smith's

* See "*Piers Plowman Social and Economic Histories*," Book V., Chap. IV., for the origin of English banking.

Bank." It was worth while to leave savings with Mr. Smith, for he paid interest on them. Thus both Smith and Wood accepted deposits, like modern bankers.

At Nottingham, just before 1830, the hand frames for lace-making were being replaced by steam frames, costing £500 each. Many manufacturers wanted to borrow money to buy them. Smith found that though one farmer wanted his money one day, and one another day, they never all came at once. Thus he always had an average amount of money in hand, and out of this fund, he lent sums at interest to the manufacturers. Thus he was doing what modern bankers do when they lend money to trustworthy people.

In all such private banks there was a special danger. If a banker was ruined, depositors lost their savings, and as the banker usually kept his affairs to himself, they did not know their own position.

Beside these banks owned by private individuals, a second type already existed, known as a Joint Stock Bank, owned by a body of shareholders. In such banks, not only the depositors, but also the shareholders, ran risks, for if their bank broke, each shareholder was personally responsible to depositors and other creditors to an unlimited extent. For example, for many years the "City of Glasgow Bank" prospered. In 1877 it had 1270 shareholders, mostly ministers and lowland farmers and graziers, and small Glasgow traders. In the 133 branches, over 59,000 people had deposits. When on October 2nd, 1878, the bank stopped payment, there was panic in Glasgow, and no business was done, for no one knew who was ruined. Over £6,000,000 had been lost by speculation, and the directors were guilty of fraud. The shareholders were liable to the depositors, and calls were made on men for five times the value of their shares. One small merchant had to find over £18,000, a nursery gardener £11,000; the shareholders were utterly ruined. A public subscription

was raised for them, so pitiful was their condition. Thus not only depositors, but shareholders * were plunged into disaster.

This catastrophe brought about a great change. In 1879, Parliament enacted that joint stock banks might register themselves as limited liability companies, under the Act of 1862. At small expense they could change the position of their shareholders, and make them responsible only for the amount of their shares. The effect of this change is shown by such cases as that of Farrow's Bank, which broke in December, 1920. There was heavy loss to the depositors. But the shareholders had to forfeit only the amount of their shares. Most of the 4000 shareholders escaped fairly lightly. Moreover, the banks were compelled to publish their balance-sheets openly every year, so that any one could see what their position was. Thus the coming of the limited liability bank has greatly reduced the shareholders' risks, and the suffering involved in the breaking of a bank.

Banks provide easy ways of payment, without the use of actual coins. Institutions like Wood's and Smith's did so mainly by issuing notes. But in 1844 an Act forbade any newly founded bank to do this, and ordered all the old ones to keep large amounts of gold as security for the notes. Bankers did not find it worth while to do this, and gradually the work of issuing notes was left to the Bank of England.

Another reason for the decline in the use of notes was the increased use of cheques. A cheque is a written order to a banker to pay money to some person.† Looking back to 1840, a great banker wrote :

"The practice of keeping Bank accounts had also extended very much, so that instead of carrying notes in their pockets as formerly, people now lodged notes with their Banker, and made their payments by giving cheques on the Bank."

At first, cheques might only be used within fifteen miles

* See "*Cranford*," by Mrs. Gaskell, Chap. XIII.

† A cheque from 1689 is given in "*Piers Plowman Social and Economic Histories*," Bk. V., p. 89.

of the bank ; but in 1853 Parliament took away this restriction, and they came into wider use. In the year 1914, three hundred million cheques were drawn. They have become the most ordinary means of payment.

There are, however, dangers in taking cheques. The man who accepts one believes that the writer can pay. In earlier time no one would have accepted a mere "promise to pay" without some knowledge of the man who promised. But after 1838 many mail bags were carried swiftly by train, and by 1854 the telegraph was flashing its messages incredibly fast, and people could find out quickly whether a cheque was good. In New York, in 1854, there were bankers who received and sent as many as six to ten telegrams daily. English business men were beginning to do the same. A man's position could be ascertained while he waited in the office. This led to a vast extension of confidence. Such confidence is very valuable in trade, for it enables men to do business quickly. It is founded on the personal honesty of every one who writes a cheque. It is on this confidence, known as credit, that the trade of the world now depends.

III. ELECTRICAL COMMUNICATION

Side by side with the coming of railways and the development of banking, new inventions were being made, which were useful to business men. Of these, the most important were the result of discoveries in electricity, viz. the telegraph, which transmitted signals, and the telephone, which transmitted actual sounds.

By 1830, it had become possible to create and use electricity. In 1837, two men, Cooke and Wheatstone, took out a patent "for improvements in giving signals . . . in distant places . . . by means of electric current." The telegraph was laid by the Great Western Railway, and by the London

hoped "to telegraph sounds." Most people thought this folly ; he wrote :

"I live too much in an atmosphere of discouragement. Such a chimerical idea as telegraphing vocal sounds would indeed to most minds seem scarcely feasible enough to spend time in working over !"

But already he had managed to reproduce sounds over a very short distance. In July, 1875, he tested his instruments, with the help of a friend.



FIG. 17.—The Telephone ; a Demonstration in 1882.
From "The Illustrated London News," 1882.

"Bell spoke and shouted and sang into one instrument, while Watson listened to the other downstairs. Watson rushed upstairs in great excitement to say that he could hear Bell's voice quite plainly, and could almost make out what was said."

This was the first telephoning.

By 1877, many telephones were in use in America, and Bell came to England. The first English telephone company was formed in 1879, and opened two tiny telephone exchanges

in the city.* But English business men were very slow to adopt it. One man wrote :

“ I have one in my office, but more for show, as I don't use it, because I do not want it. If I want to send a message to another room, I employ a boy to take it.”

Moreover, the telephone company was supervised by the Government, and was only allowed to work within a four-miles radius of the Exchange. The apparatus was imperfect, and the charges high. But in 1884 the Government allowed the use of the telephone over longer distances. Then business houses began to use it, and traders who were young in 1884 can tell of the change which it brought. Even twenty-five years ago, telephones were not common in middle-class houses ; and whereas, in 1914, there were over 9,500,000 telephones in the United States, we in England had but 750,000.

From 1888, scientists were working at a new problem, that of signalling through space by electricity without wires. In 1888, a German professor, Dr. Hertz, discovered a new kind of wave. These waves were not in the atmosphere, but in a substance hitherto unknown, now called ether. They were produced by the discharge of an electric spark, and they travelled far more quickly than sound waves. They produced an effect on a sensitive plate, and these “ effects ” can be made to represent sounds.

The first scientist to make a practical set of wireless instruments was the Italian, Marconi. He came to England in 1896, and the Marconi Company was formed in 1897. At the same time, in Germany, scientists and business men founded the Telefunken Company. By 1903, this company could work at a range of about 250 miles. This was most useful for vessels at sea, and shipping lines were the first to

* *Bernard Shaw was one of their clerks.*

use wireless telegraphy.* But soon its value became clear. In 1909-1910, the Government bought from the Marconi Company the wireless stations on the coast (except two), and the Post Office organized the service of messages for ships at sea. For places inland, messages still went through the Marconi stations.

Wireless communications could be picked up by any one who had the wireless instruments, and so they might become public property. Yet there was a limit to this publicity, for they were usually couched in a code, such as the Morse system, with its alphabet of dots and dashes, which are unintelligible to the ordinary person. Yet here and there an amateur set up his own receiving apparatus, learnt the Morse system, and caught what messages he could. Until 1921, wireless apparatus worked, as does the telegraph, by producing these symbols, which stand for sounds, and need to be interpreted by some one who has learnt the code. But if the wireless transmission could be combined with the carrying of sounds, so that words could be carried by the waves, then messages would be available for all to hear. This possibility had been foreseen long before, and was realized at last. In 1921 the Marconi Company produced instruments which enabled men to telephone by wireless. Broadcasting began. Already this is making changes in social life. Its value for trade is easily seen; the seller and the buyer get information in quite a new way.†

** But often even the largest liner had but one operator. When the great liner, the "Titanic," sank in 1912, there was a vessel within 18 miles, fitted with wireless, and so able to receive her wireless cry for help. But the one operator was off duty, and so the chance of saving hundreds of lives was lost.*

† Paris broadcasts on Saturday night the closing prices of goods in the Central Market. In Germany there has been a broadcasting campaign to promote the sale of fish.

IV. MOTOR TRANSPORT

We have seen how the railways of Britain had killed the ancient life of the road. In June, 1895, the first motor car ever seen in England was landed from France, and with it a new era was coming in. The car had a very small bonnet, flanked by large carriage lamps, and the body, perched high on small wheels, was big and lofty.* The difference between this car, and all previous light steam cars, such as traction engines, lay in the power used. In steam cars, the wheels were driven by a piston, worked by successive pushes from expanding steam; the steam came from a boiler, heated by fires. But the motor engine produced power to push the engine by a series of small explosions of petrol gas, brought to exploding point by hot gases which were allowed to surround the gas-tube in the cylinder. No fire was needed in this "internal combustion" engine, and it was smaller and lighter than a steam engine. Many inventors had worked at these engines; it was Gottlieb Daimler who first made a practicable one, and his work was taken up by M. Levassor. In 1894 the latter won a race, arranged by a newspaper, from Paris to Rouen, in which steam cars competed against the few petrol cars. In 1895, both in France and Germany, people were very much interested in car racing.

In England, motor cars had been so far unknown. One of the earliest English owners brought a car from Germany, and spent nine days trying to find out how to start it. After his first drive the village policeman brought him a summons, because he had passed through a town not preceded by a man with a red flag, as the law required. The increase of motor vehicles in Great Britain is shown by the following table :

* It belonged to the Hon. Evelyn Ellis, of Datchet.

June, 1895.	1923.	1908.	1905.
1 car	1,105,000 (173,000 trade, 86,000 buses, taxis, etc.)	Over 154,000 (71,000 private, 12,000 trade, nearly 6000 buses, taxis, etc.)	About 74,000

In 1911 it was said : " The electric car is still the luxury to be employed in towns, and in covering short distances." To-day all this is changed, owing to two main factors. First, cars are cheaper, mainly because of the efforts of British makers to rival cheap American cars. Secondly, between 1914 and 1918, during the War, motor vehicles were adapted for all uses.

" They have travelled millions of miles on broken pavé. They have run through marshes, across open country, and over sandy deserts. Every part capable of giving trouble has had every opportunity of doing so."

England is a country very suitable for motor traffic. She has more miles of road in proportion to her size than any other land. Her population lives in great centres covering many square miles. The car or van can go to every suburban street, to every small hamlet or lonely house. No railway can do this. Since 1918 especially, there has sprung up a motor carrying trade, partly in the hands of shopkeepers, partly in those of carrying agents.* On a large scale, exchange is being carried on with great rapidity. This will help any increase in the whole volume of our inland trade.

Since 1918 another method of motor transport has been open to us. Flying in machines heavier than air had become practicable since 1913. Every European army had aeroplanes at the beginning of the War. The aeroplane was really a consequence of the motor engine, for, although wing curves and

* One firm is described thus : " Seventy and sixty horse-power motor vans are in use, while for the heavier class of goods, steam wagons are employed. The total weekly mileage of the vans is approximately 25,000 miles. Some 13,000 parcels are dispatched daily. . . . Goods are delivered within a radius of 50 miles, and in special cases, up to 100 miles."

IV. MOTOR TRANSPORT

We have seen how the railways of Britain had killed the ancient life of the road. In June, 1895, the first motor car ever seen in England was landed from France, and with it a new era was coming in. The car had a very small bonnet, flanked by large carriage lamps, and the body, perched high on small wheels, was big and lofty.* The difference between this car, and all previous light steam cars, such as traction engines, lay in the power used. In steam cars, the wheels were driven by a piston, worked by successive pushes from expanding steam; the steam came from a boiler, heated by fires. But the motor engine produced power to push the engine by a series of small explosions of petrol gas, brought to exploding point by hot gases which were allowed to surround the gas-tube in the cylinder. No fire was needed in this "internal combustion" engine, and it was smaller and lighter than a steam engine. Many inventors had worked at these engines; it was Gottlieb Daimler who first made a practicable one, and his work was taken up by M. Levassor. In 1894 the latter won a race, arranged by a newspaper, from Paris to Rouen, in which steam cars competed against the few petrol cars. In 1895, both in France and Germany, people were very much interested in car racing.

In England, motor cars had been so far unknown. One of the earliest English owners brought a car from Germany, and spent nine days trying to find out how to start it. After his first drive the village policeman brought him a summons, because he had passed through a town not preceded by a man with a red flag, as the law required. The increase of motor vehicles in Great Britain is shown by the following table:

* It belonged to the Hon. Evelyn Ellis, of Datchet.

June, 1895.	1923.	1908.	1905.
1 car	1,105,000 (173,000 trade, 86,000 buses, taxis, etc.)	Over 154,000 (71,000 private, 12,000 trade, nearly 6000 buses, taxis, etc.)	About 74,000

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stability had been much studied between 1889 and 1900, no steam engine could be made light enough and strong enough to work a flying machine. In 1903 the brothers Wilbur and Orville Wright first put a motor engine into one of their machines and flew for 12 seconds, and landed safely. In 1905 they flew for half an hour, and in 1906 M. Santos Dumont made a real flight in the Bois de Boulogne.*

In 1913, the men who flew were either military officers, or civilians training as experimenters and racers. There was no aviation for the ordinary traveller, or for mails. It was in 1919 that the Airco Company first began a daily dispatch for letters or passengers to Paris. Now, there are journeys made daily to Paris, Berlin, Rotterdam, and Cologne, and in these centres English travellers can re-embark on the great European line of flight. The aeroplane has come into commerce as the swiftest known carrier of men and mails.

We deal with distance, learn news, and handle goods, in ways hitherto unknown. These new powers should enable each district to exchange its wares more fully with its neighbours. It may be that these wonderful new means may bind place to place in a unity of interest and exchange, of which men have hitherto only dreamed.

* I. *The Growth of Flying*

- 1889-90. *Langley and Maxim. Short flights in machines driven by steam engines.*
 1903. *O. and W. Wright first use petrol motor.*
 1905. *O. and W. Wright fly for half an hour.*
 1906. *S. Dumont flies 220 metres.*
 1908. *Wrights and others make frequent short flights.*

II. *Long Distance Flying*

1909. *Blériot flies across Channel.*
 1910. *Farman flies from London to Manchester.*
The circuit of Europe flown.

III. *World Flying*

1919. *First flight (by an American) across Atlantic.*
First English flight across Atlantic (Alcock).
First flight (by an Englishman) to Australia.
 1923. *First flight (by Americans) round world.*

BOOK LIST

Author.	Book.	Publisher.
Badminton Library	Motoring	
Bourne, H. R. F.	English Merchants	<i>Chatto & Windus.</i>
Dickens, C. ..	The Pickwick Papers	—
Hughes, T. ..	Tom Brown's Schooldays	—
MacLeod, H. ..	History of Banking	<i>Longmans, Green & Co.</i>
Porter, G. R. ..	Progress of the Nation, edited by F. W. Hirst, 1912	
Pool, J. ..	Wireless Telegraphy ..	<i>Pitman.</i>
Pratt, E. A. ..	A History of Inland Transport and Communication in England	<i>Kegan Paul.</i>
Spencer, Herbert	Autobiography (vol. i.) ..	<i>Williams & Norgate.</i>
Tomlinson, W. ..	History of the North-Eastern Railway	<i>Longmans.</i>
Traile, H. B. ..	Social England (vols. v. and vi.)	<i>Cassell & Co.</i>
Whitaker, J. ..	Almanac	
Webb, S. and B.	The King's Highway ..	<i>Longmans.</i>

CHAPTER VI

WORLD TRADE, 1830-1875

THE people of the British Isles at the present day are dependent for many of the necessities of life upon World Trade. There is scarcely a country to which British goods do not go ; and our food and the raw materials of our clothes, our furniture, and parts of our very houses, have travelled to us from the ends of the earth. Over the surface of land and sea, at every hour of the day and night, corn and wool, meat and wine, timber, iron, carpets—are moving about the world. Silently through the air and under the ocean messages are flying ; buying and selling are going on between people who will never see each other ; and without the passage of money, goods are being paid for and delivered. This wonderful world-commerce, in which every civilized country now takes a share, has come finally into being within the last 100 years, though the causes had long been preparing.

Trade, even in its simplest forms, needs certain factors. First, some one must want a thing which somebody else has to spare ; there must be a buyer and a seller. Secondly, the purchaser must have something to give in return, either goods or work.*

What is true of trade between individuals, is true also of the commerce of nations. Trade between separate peoples

* Usually, of course, he gives money or a promise of it ; but money is only a means of exchange, and merely represents a certain value in goods or in labour.

will grow up only when one community wants things which another can supply, and has goods or useful services to give in exchange. In other words, each country pays for its imports entirely by means of its exports, unless it can supplement the value of these by offering to do needed work.* Trade throughout the world will develop when every community on earth has wants which it depends on others to supply.

Ever since the 16th century the forces had been at work preparing for the development of world trade. In the first place, men and women from various parts of Europe had been emigrating to the New World, and had taken with them needs and likings which European peoples alone could satisfy ; for the new lands were too little developed to be fit for any but the most primitive manufactures. To purchase what they needed they had sent to Europe such things as gold, silver and precious stones, fish and timber, sugar, spices and tobacco—in short, either luxuries or raw materials. Even in the Middle Ages, there had been buying and selling between Europe and the old lands of the East.† In the 17th and 18th centuries this oriental trade had been much enlarged by the great Dutch, French and British East India Companies.‡ But in the 19th century, and especially after 1830, the thin stream of emigration from Europe to the New World became a mighty torrent. Thus it came about that North and South America, Australia, New Zealand, Africa, the East and West Indies, India and the Straits Settlements took part in world trade. Communication was opened up also with the mysterious lands of the East ; Japan was persuaded, and China was forced, to open ports to

* *We British, as a people, have in the past paid for millions of pounds worth of imports through the labour of our seamen and shipowners in carrying the goods of other nations, and through the work which our London bankers have done in managing the money affairs of the world.*

† *See Books II. and III.*

‡ *See Book V., Chaps. V. and VI.*

our merchants. Even in the far Pacific the simple and primitive islanders were visited by Europeans; English, French, German and American settlers came there to grow sugar, coffee, tea and cotton. Thus the spread of European peoples over the world was the first great cause of the growth of world trade.

A second cause was the Industrial Revolution, which began in Britain* and spread first to Europe and then to the United States; for this enabled the leading industrial countries to produce vast quantities of coal and iron and of manufactured goods which they did not themselves need and for which they were anxious to find buyers. On the other hand, they required many raw materials which they could not produce. Britain also needed great quantities of foodstuffs for a population too big for her own agriculture to support. Thus at the very beginning of the 19th century the merchants of Great Britain had become urgent buyers and sellers of goods; and as the Industrial Revolution spread to other lands, the traders of those countries followed their example.

A third cause of the growth of world trade was the removal of obstacles to intercommunication. Many old-time prejudices of Governments and peoples had to be overcome; many difficulties of travel, transport and exchange had to be surmounted, before trade could flow freely the world over.

From 1830 to 1875 Britain was, of all nations, the most powerfully influenced by all these three forces underlying world trade. In emigration to the New World the British led the way, and in the Eastern trade our merchants became pioneers in the intercourse with China and Japan. As the birthplace of the Industrial Revolution, Britain was first in the field with coal, iron and manufactured goods. As the

* See Book VI., Chaps. V., VI. and VII.

native home of the steamship and railway, she was the first to surmount the obstacles to extended transport. Between 1830 and 1850 some of the remaining handicaps to her commercial supremacy were removed; from 1850 to 1875 she was the unchallenged leader of the world's commerce.

I. 1830 to 1850

In 1830 our sea-going traders still went in sailing-ships of a time-honoured build. Copied in the 17th century from the Dutch, the traditional British vessel was in length only four times its breadth or "beam," and was slow and lumbering in its course. The shipbuilders of the United States had twenty years before this time begun to build vessels five and six times the length of their beam, and had proved that these longer, narrower vessels were swifter and easier to navigate, and would take more cargo. But the British were slow to follow. The largest of our merchant ships were the great East Indiamen of about 1,500 tons, which traded with China; they required crews of 130 men, and this is said to be four times the number carried in 1870 in a sailing-ship of equal tonnage. The ordinary trading ship of 1830 was much smaller; it ranged from about 150 to 700 tons, and carried in proportion to tonnage twice the crew necessary in 1870. Not till 1846 was any serious attempt made to improve our sailing-ships.* Not till after 1850 did the greatest day of the British sailing-ship dawn.

The men who owned these ships, and those who navigated them, were an important factor in British trade. In the 18th and early 19th centuries, when a shipowner had a small number of ships returning regularly to the port where he lived, he was able personally to inspect each out-going

* The Americans had in 1845 begun to build their famous "Clippers" for the China trade, with a length seven times that of the beam, and a swiftness hitherto unknown.

vessel, its repairs and its stores, and looked forward to the time "when his ship came home." The master mariner and crew also, in returning to port, came back to their homes. But as ocean trade developed the voyages were longer and seamen were carried to many ports; and when the ship

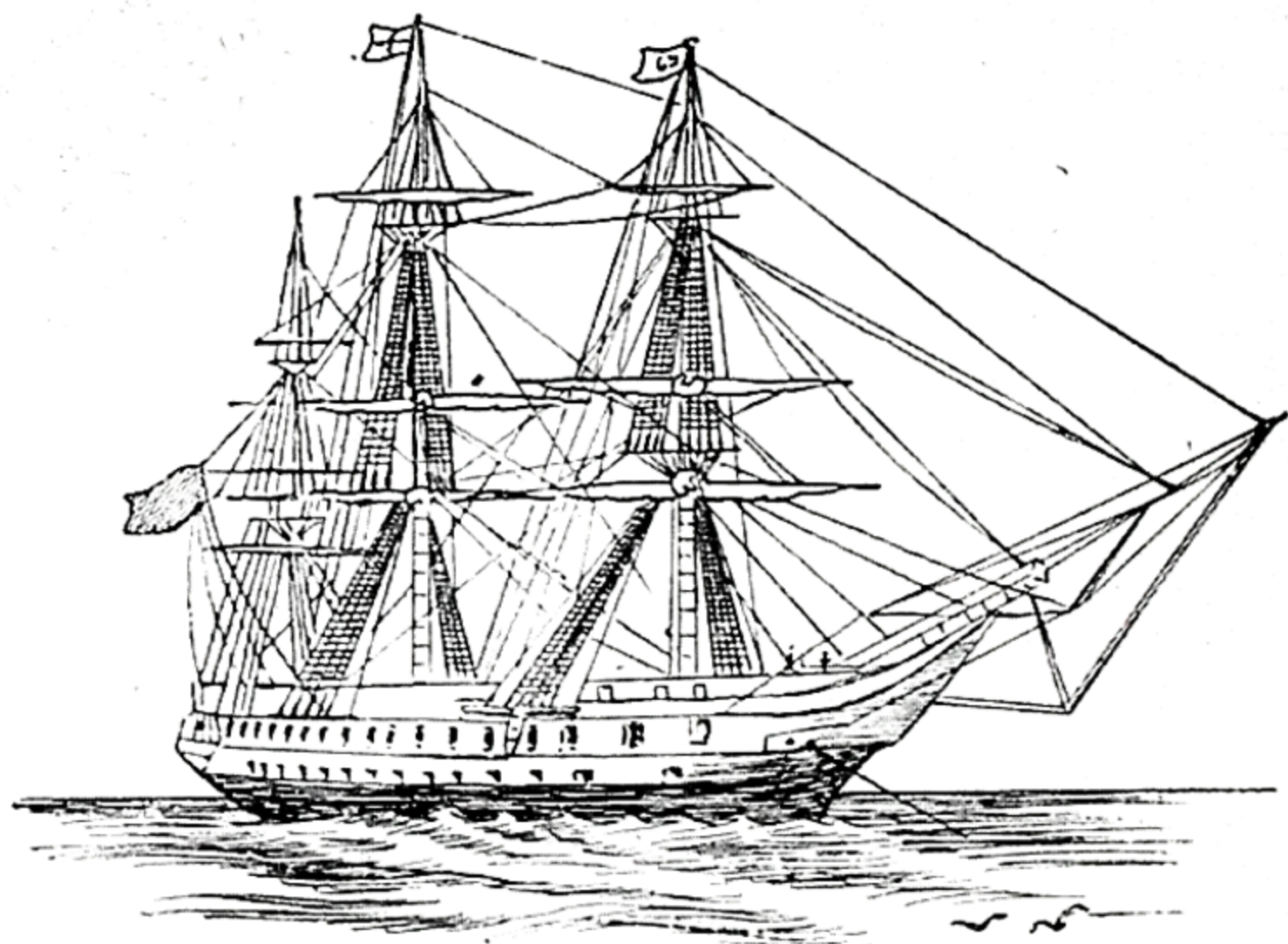


FIG. 18.—"The Queen," East Indiaman, 1842.

From "The Illustrated London News," October 1842.

She was 1352 tons burden, and measured 208 feet from the fore part of the stem to the after part of the taffrail, and was 40 feet in extreme breadth. She was built for the Calcutta trade, carried "a great many passengers," and was "fitted with every accommodation."

"The above we have considered worthy of presentation to our readers inasmuch as the novel and ingenious improvements employed in her construction render her an object of considerable interest."—*I. L. N.*

returned it did not always put in to the same British harbour. The shipowner also had many more ships than he could inspect; thus the old personal relations between owner and mariner began to disappear. With the extension also of the practice of marine insurance, especially during the dangers of the Napoleonic Wars, owners who insured the whole value

of ship and of cargo were relieved of material anxieties about their ships. In some cases, tempted by the prevailing money-making spirit, wicked shipowners left ships for years unrepaiied, and insured their vessels for two and three times their value.* Thus if, as frequently happened, a wreck occurred, though the crew and the cargo went to the bottom, the shipowner made a great profit. Crime such as this was perhaps exceptional, but the temptations to it were growing. There was no law to prevent any vessel, however bad, from putting to sea, and none to empower the Government to investigate the reasons if it went aground.

The mariner's life was one of the utmost hardship and danger. Docks and harbours were, it is true, being built, lighthouses were being established, charts were being improved, and lifeboats had been invented.† In 1836 the management of all the private lighthouses in England and Wales was transferred to the Corporation of Trinity House, and by their vigilance lighthouses, lightships and buoys were increased in number and improved in character. Plymouth break-water was finished in 1841, and many other harbours were made in which storm-driven vessels could shelter. The National Lifeboat Institution had been founded in 1824, and through its work a small number of lifeboats were already installed. But the subscriptions which had placed them round the coasts were in this period steadily going down, and between 1841 and 1850 the Lifeboat Institution made no report and appealed for no funds. In 1849 there were probably only twenty efficient lifeboats round the shores of Britain. It was in 1839 that Grace Darling and her father,

* Since marine insurance is effected not by a powerful Insurance Company, but by individual underwriters, each of whom takes a share of the risk, and each of whom undertakes to insure many vessels in the course of a single day, the detection of such frauds was almost impossible in days before Government inspection.

† See Book VI., Chap. VIII.

the keeper of Longstone Lighthouse, in an ordinary boat rescued nine men from a wreck. Meanwhile, year by year, more and more vessels and lives were lost at sea, often within speaking distance of land.

The small ship of the time was in charge of a master and two mates, engaged by the shipowner. These men had learned their trade by beginning life as raw ship-boys. At this period France, Russia, Prussia, Denmark, Sweden,

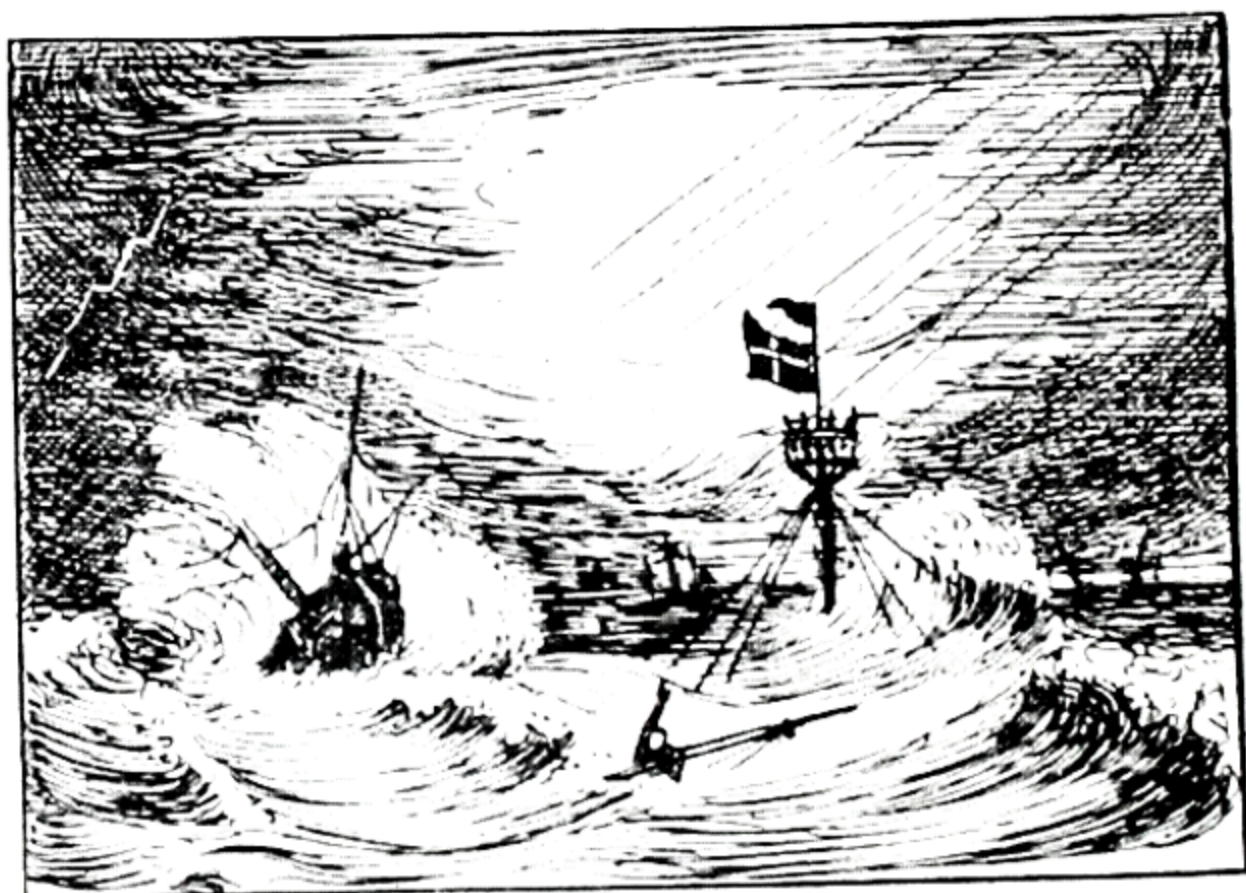


FIG. 19.—Refuge Beacon on the Goodwin Sands, 1842.

From "The Illustrated London News," November 1842.

It consisted of a mast with a gallery capable of holding 30 persons standing, and was erected by Captain Bullock to enable people who reached the sands during a wreck to climb to safety and await rescue when the tide rose. "The Goodwin Sands are the scene of the most frequent and fatal shipwrecks. There is no other spot perhaps on the face of the earth so well known for its dangers or so much dreaded by seamen."—*I. L. N.*

Norway and the United States had all instituted Government tests and examinations before allowing men to be masters or mates, but not until 1850 did our Government intervene. Moreover, in most foreign countries the standard of book education was higher than in ours, for Englishmen did not believe in it. The British shipowner, the sole judge of the fitness of the British master mariner, too often held the easy-

going opinion that schooling was a positive handicap. British masters and mates were, at their best, good natured, jolly, homely and honest men ; but they were given to hard drinking when in port, and sometimes were intoxicated even at sea ; and many a wreck was the result. In 1843 our Foreign Office made an inquiry of the British Consuls all over the world as to the competence of our master mariners. They received seventy-five replies, of which only three were favourable. Large numbers of master mariners were said to be ignorant, and often incapable.

“ I am sorry to state that in my opinion the British commercial marine is at present in a worse condition than that of other nations.”

This was the gist of many reports, and later evidence confirmed them.

A large proportion of the British seamen also who sailed in these vessels could neither “ read, cipher nor write,” although they were skilled in many other very important arts. An English boy, going to sea for the first time, found himself in queer company. When a ship of those days came to port the men were paid off. With their wages in their pockets they came ashore, all too often far away from home, and were expected by landmen to play the part of the “ jolly tar.” They were decoyed into low taverns and disreputable lodging-houses, and they rapidly drank or gave away their money. They then sought a ship for a new voyage, and were sometimes carried on board dead drunk. Once out to sea, however, different qualities appeared. When the pilot left, the master took charge. The two mates picked their men and boys for the two “ watches ” which were to share the work of the twenty-four hours. At noon of each day, and every four hours after it, “ eight bells ” were sounded, by beating eight strokes on the great bell. Each watch worked alternately for four hours, and the time

was marked in half hours by the bell being struck one, two, three, four, five, six, seven or eight times, till the change of the watch. There were on board a cook, a carpenter, a cooper, a sailmaker; besides these there were three types of men known as "able seamen," "seamen," and "greenhands" or "boys." A boy or greenhand abroad for the first time had not only to coil ropes, sweep decks and do any unskilled work that came along; he must at once learn to go aloft amongst the ropes and spars of the rigging, and help to reef and furl the lighter and less important sails; he must join the rest in hauling ropes, and helping to shift the sails to catch the wind; and later he must learn to steer. All these things, too, the ordinary seaman must know; he must "haul, reef and steer." In addition to these accomplishments an able seaman must be able to reef and furl the more difficult sails, and must be a skilled workman on the rigging, able to make a splice, fit a blockstrap, and make or mend a sail; for the ship must be kept in repair while on a voyage. The accommodation for the crew was bad. The master, mates, and steward had a cabin on deck, and the master a separate room. But the rest slept and ate, crowded beneath the main deck, in the pestilential quarters known as "steerage" and "forecastle"—the one towards the rear, the other towards the front of the vessel. In a ship of 420 tons which one writer remembered, the fore-castle, which tapered towards the bow, measured at its longest and widest only 20 by 21 feet, and was only 5 feet high. The only light and air came from above by a scuttle in the main deck two feet square, which was tightly closed when the waves beat high. Here 14 men and boys slept in hammocks suspended from the beams. Cables and coils of rope, casks of water and provisions, and the men's sea-chests for clothes, filled almost all the floor-space, and there was not even room for the men to sit astride their chests. The place was full of rats. Food

consisted of inferior pork, very hard salt beef, and brown biscuits often full of maggots. Though the value of lemon-juice for keeping off scurvy had been proved in the 18th century by Captain Cook, and though it had been adopted for 30 years in the Royal Navy, few ships carried it, and scurvy still attacked crews long at sea.

On wild and stormy nights, when all hands were called on deck, and half the men were sent up aloft to struggle in the darkness with creaking wet sails and wind-driven rigging, it would sometimes happen that a man or boy would lose his hold and be plunged headlong into the boiling sea, never to be heard of again. Even in a moderate wind the whole ship might break to pieces through rotten and neglected timbers, or it might run aground because it was badly navigated. On a very long voyage food and water might run short or go bad, and then the crew would die a fearful and lingering death. In a life like this old time-honoured beliefs and superstitions naturally lingered: the doings of the porpoise, the flight of the sea-bird, had their special meanings; the ship which sailed on a Friday would certainly be lost. Brave as were our sailors, they were unfairly handicapped; on the other hand, in the words of an Englishman of this period, "an ignorant American seaman was scarcely to be found."

Besides our handicap in ships and their personnel, trade was still clogged by ideas of monopoly. It is true that in 1834 the East India Company, the last of the great 17th-century companies, lost its surviving trade privilege, that of carrying on the sole British trade with China.* But though company monopolies in foreign trade had gone, people still believed in national monopolies. These took two forms.

* See Book VI., Chap. VIII. The effect of this monopoly on the prices in England is illustrated by the fact that in 1828 tea sold by the Company in England at 2s. 4d. a lb. was being sold in Hamburg at 1s. 2½d. a lb.

Producers believed in keeping out of British dominions at home and abroad any commodities of other nations which might rival their own ; and shipowners believed in keeping away as far as might be from British and Colonial ports the vessels of foreigners. High protective customs secured the first, and Navigation Acts secured the second. The fearful depression in internal industry and trade described in other chapters was the result.

At length however in 1840, at a time of unparalleled poverty and depression, Parliament was roused by the falling off of customs duties. A Select Committee of the House of Commons was appointed to inquire into our import duties. It was found that we taxed at the ports no less than 1,150 commodities. Of the money thus raised no less than 94 per cent. was levied on seventeen articles essential to the nation. These were, first certain foodstuffs, viz., corn, butter, cheese, currants, raisins, coffee, cocoa, sugar and tea ; second, certain raw materials, viz., cotton, sheep's wool, timber and tallow ; third, certain manufactured goods, viz., silks, tobacco, wines and spirits. Some things we excluded altogether ; for example, live stock and fresh meat, bacon and apples. A very large number of other manufactured goods on which a duty was laid scarcely came in by the ports at all ; for example, china and earthenware, watches and clocks, manufactured cottons and woollens, leather gloves, boots, shoes, hats, paper and toys. An immense amount of smuggling went on, especially in French wines, brandies and silks. In those days it paid the traders of Winchelsea, Rye, Folkestone, Hastings, Deal, and scores of other ports and villages along the coast to meet the French in mid-channel on dark nights and take over cargoes of their things. They then ran them ashore on remote beaches, and even in small harbours, to be hidden in well-known inns and in private houses up recesses in wide chimneys, in secret cupboards and in cellars ;

sometimes, with a commission to the parson, they were even hoarded in the tower of a parish church.*

Most foreign countries had trade laws similar to our own. But one nation, as the evidence before the Select Committee showed, had adopted a wiser policy. There was in those days no German Empire, but there was a confederation of some thirty-nine German kingdoms, principalities and great cities, bound together in the main by ties of blood and tradition. The most important state was Prussia, and she had from 1834 onwards persuaded many other states of central and southern Germany, such as Wurtemberg, Bavaria, Saxony and Baden, to join a Customs Union or "Zollverein." Those who joined undertook to abolish nearly all duties in trading amongst themselves; they further adopted free import for raw materials, and on manufactured goods from outside they laid only very moderate duties. These German States were still, like the England of the early 18th century, chiefly engaged in agriculture and forestry; but in the great Prussian regions of Westphalia and Silesia, and also in Saxony, flourishing manufactures were rapidly growing up. The cost of living was about half that of England, and goods could therefore be made much more cheaply. In the great annual fairs of Leipzig, Berlin and Vienna, English goods were still considered the best, but German goods were underselling them, and were stamped often with bogus English marks. American traders were beginning to purchase these goods instead of coming to England to buy. A Prussian had remarked to an official of our Board of Trade that England had driven the German people to turn to manufacture by her refusal in 1815 to buy German cattle and corn.

* The last of a famous gang of Sussex smugglers died in the Eastbourne Infirmary in 1895. The Market Cross Inn at Alfriston, which the gang haunted, has six staircases to facilitate escape, a secret storing-place to which kegs could be lowered from the attics, and an immense open chimney with wide recesses half-way up it.

“ ‘ You compelled us to become manufacturers.’ . . . This was the common saying in Prussia, where every man is intelligent, and where every man thinks, and where, as soon as he sees an effect, he immediately inquires into the cause.” *

The report of the Select Committee of 1840 began to take effect in 1841, when Sir Robert Peel became Prime Minister. The grandson of a Lancashire yeoman manufacturer, he was deeply distressed by the poverty of the times. Though his party was wedded to Protection, he slowly became converted to a freer trade by the Select Committee's report. Step by step, between 1842 and 1845, therefore, he reduced or abolished duties and allowed the import of many things hitherto prohibited. By 1845 the 1150 duties had been cut down to 590, and many raw materials were admitted free : in 1846 the Corn Laws were all but abolished.† Trade and manufacture began to revive.

Meanwhile, the great developments in transport were preparing the way for vast changes. At home the railway system was already well under way.‡ On the sea the steam-ship was already running. The little wooden steamer worked by a revolving paddle had been first introduced in the United States in 1809 for inland navigation on the great lakes and rivers. It had been adopted in Britain from 1812 onwards on the Clyde, Forth, Thames, Mersey and Humber, and here and there along the coast ; in 1816 a regular cross-channel service to France, and in 1818 a Holyhead-Dublin service, had been started. A sailing-ship had been helped by additional

* The whole of Germany was not fully agreed on this policy. The agricultural and commercial North favoured the system ; but the iron-masters of the Rhine soon complained that English iron was being dumped in Germany, and that between 1839 and 1843 the German iron in use had fallen from 78 per cent. to 45 per cent. of the total. The cotton-spinners of Bavaria, Wurtemberg and Baden also complained of the import of English yarn. From 1843 to 1850, therefore, the duties on these commodities were increased, and gradually the free-trade policy was dropped in Germany.

† See Chap. I., p. 9. Peel's tariff changes were carried on and completed by Gladstone in the famous Free Trade budgets of 1853 and 1860.

‡ Chap. V.

steam-power to cross the Atlantic in 1819, and other experimental voyages had been made. At Deptford, in 1822, the General Steam Navigation Company, the first of its kind in the world, had been founded. But many men of science still thought the idea of regular navigation of the Atlantic by steam-power a dream. "They might as well talk of making the voyage from New York or Liverpool to the moon," said one of them, lecturing at Liverpool in 1835.

In 1838, however, the *Sirius*, a small British vessel of 700 tons, sailed from London to New York. Within two days it was closely followed from Bristol by the *Great Western*, of 1320 tons, built by Brunel the great engineer, as an extension of the Great Western Railway of England. The ships made the passage in seventeen and fifteen days respectively, arriving within a few hours of each other, and they were welcomed in New York harbour by hundreds and thousands of people. The *Sirius* had burned all her coal and some even of her wooden spars; but the *Great Western* had a quarter of her coal supply left. As a New York paper said:

"Thus the grand experiment has been fairly fully tested, and has been completely successful. The only question now in the case is that of expense. Can steam-packets be made to pay?"

The steamship of those days was broad and clumsily shaped, and the engines were extravagant of fuel. The ship was driven through the water by paddle-wheels, one on each side, and as the vessel rolled in rough weather these wasted energy by beating the air. The use of a screw, fixed under the stern and working entirely beneath water, had already been demonstrated on a small vessel in the Thames in 1836, but the idea had not been taken up in England. While therefore the greater swiftness and certainty of the steamship commended it as a carrier of passengers and mails, its great expense was prohibitive as yet for ordinary commercial transport.

The British Admiralty now invited tenders for carrying American and other mails. In 1840 Samuel Cunard, a ship-owner of Halifax in Nova Scotia, entered into partnership with a Liverpool and a Glasgow shipowner. They obtained from Government a contract and a subsidy for carrying the mails from Liverpool to Halifax and Boston, and so inaugurated the first regular service for passengers and mail steamers across the Atlantic. It was by this route that Charles Dickens crossed, in most uncomfortable fashion, in 1842. The Cunard line was quickly followed in 1840 by the Royal Mail Steam Packet Company to the West Indies and the Isthmus of Panama, whence passengers were conveyed by camels and mules to the Pacific. Then the Pacific Steam Navigation Company was founded and got permission to link up with the Panama route, and carry mails and passengers from the Pacific coast of Panama to the South American Republics of the western seaboard. In 1837 the Peninsular Company had obtained the contract for the mails from London to Lisbon; in 1840 it extended the steamship service to Malta and Alexandria, and in 1842 began to send steamers round the Cape to India. It was incorporated as the Peninsular and Oriental Steam Navigation Company, better known now as the P. & O. In 1844 this company undertook a direct mail service from England, first to Alexandria, thence up the Nile by steamer and over the Isthmus of Suez by camel*; from the Red Sea another steamship went on to Ceylon, to Calcutta, and to China.

One other important development in shipbuilding had been introduced, but was hanging fire in this period. As early as 1787, iron boats for canals had been built in North Lancashire, and a small iron ship had been built near Glasgow

* Passengers, goods and mails were sent by canal and by the Nile from Alexandria to Cairo, and thence over the desert to Suez; no less than 3,000 camels were employed to take a single ship's load of passengers, mails and goods.

in 1818. The British timber supplies were exhausted, but in iron production we led the world. The iron-masters saw this, and in 1824 yards for building such ships had been set up at Liverpool and Birkenhead. In 1832 iron ships for ocean transport were first built at Birkenhead. But the public laughed the idea to scorn. "Whoever heard of iron floating?" Even the chief naval architect at one of the royal dockyards said: "Don't talk to me about iron ships; it's contrary to nature." Yet the makers found them cheaper to build and

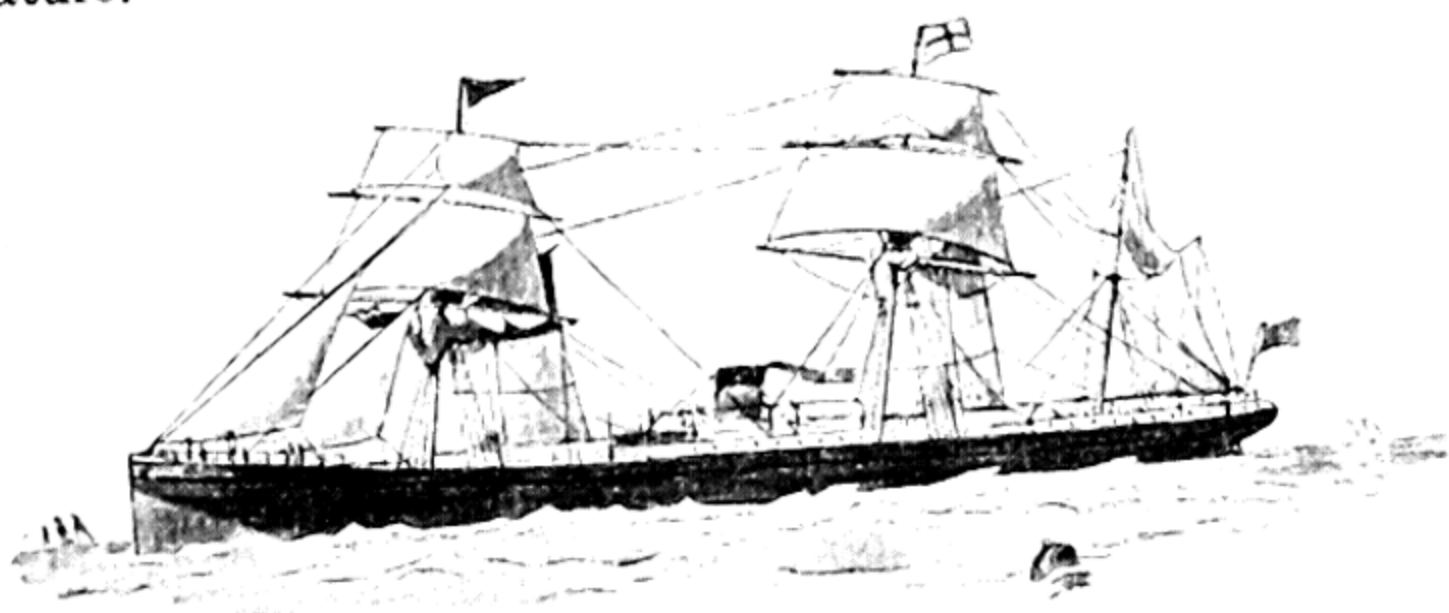


FIG. 20 —An Early Iron Steamer.

From "*The Illustrated London News*," 1872.

The *Bertha*, a liner to India. She had sails, but she had also a compound engine and a screw propeller.

to repair, and healthier to live in. In evidence given before a Select Committee in 1834, it was said: *

"A strong iron vessel will not weigh one half of that of a wooden one, and therefore will draw considerably less water. . . . Her capacity for stowage will be much greater, her sides, including strong iron frames, not exceeding 4 inches in thickness, while those of a wooden vessel will be 12 inches thick."

In 1841 Brunel built for the Great Western Railway Company a marvellous iron steamship of 3,618 tons. It was divided by bulkheads into five watertight compartments; it had iron rails for bulwarks, and bilge keels to lessen the

* *Select Committee on Steam Navigation to India*, 1834, p. 59. *Evidence, Laird and Birkenhead*.

rolling. The adoption of iron in place of wood for sailing-ships and steamers gave great encouragement to British ship-owners; without it they would have been unable to compete successfully with the Americans, backed by their vast stores of timber.

While in all these new directions British sea-borne commerce was developing after 1830, one ancient handicap still survived to hold it back. The Navigation Acts were still on the Statute Book, and shipowners clung firmly to them. The main features of these Acts in 1847, were as follows :

1. Certain articles, such as masts, timber, tar, flax, currants, raisins, figs, prunes, corn, wine, brandy, wool, oranges and lemons, produced in Europe, could only be imported into the United Kingdom in British ships, or in those of the country which produced them.

2. All goods from Asia, Africa, or America must be brought in British ships, or in those of the country which produced them.

3. Only British ships might carry goods along our coasts.

4. All goods carried from one British possession to another must go in British ships.

5. All goods imported into British possessions in Asia, Africa or America must be in British ships or in ships of the country which produced them, coming straight therefrom.

These laws discouraged foreign vessels from coming into British ports at all, since each could bring only the goods of her country. For example, as Ricardo the famous economist showed in a speech in the House of Commons in 1847, if a Spanish ship trading from Cuba should take a cargo of sugar to France and exchange it for French wine, it could not possibly come on to England and exchange the wine for British earthenware, however much the latter might be wanted in Spain. For a British Customs House Officer would forbid the master to land. " I understood you wanted

wine," the Spaniard would say. "So we do, but it must be brought by a Frenchman in a French ship." "But the French do not want your earthenware." "We cannot help that; we must not let you break our Navigation Laws." So the Spaniard would be turned away.

After a long and bitter struggle in Parliament from 1847 to 1849, the Navigation Laws were abolished, amidst the lamentations of shipowners who thought they foresaw the ruin of British shipping. Many threatened to sell their ships. The future was to show their mistake.

II. 1850-1875

A great epoch of British trade expansion took place in the twenty-five years which followed the abolition of the Navigation Acts. In consequence of the reduction of custom duties, British imports were much more than doubled. There was an immense increase in exports, especially of coal and machinery. These facts are shown by the following table:

	1850.	1875.
Imports to U.K.	£152 million	£373 million
Exports * from U.K.	£71 "	£223 "
Coal exports from U.K.	£1½ "	£9½ "
Machinery " " "	£1 "	£9 "

Amongst the most important of our exports were the coal and the iron goods, the machinery and the ships, which other nations needed in order to develop their industries and their trade. In 1850 Britain produced about one-half of all the pig-iron in the world, for abroad many great iron-fields were as yet untouched. Thus Andrew Carnegie, born

* The fact that we imported more goods than we exported was quite satisfactory, for the excess was due to the extra goods which we were able to buy through the seamen's work of carrying other nations' goods, and through London's work as Banker and as Insurance Agent for much of the world's trade.

in 1837, who went to live in Ohio, U.S.A., in 1848, tells how in the 'fifties or early 'sixties the railway to Pittsburg was only just being made. The rails were imported from England, as were also the engines. The greatest coal and ironfield of America was as yet barely surveyed, and Pittsburg, now the great iron and steel capital, was till the railway came a small unimportant place. This is a symbol of what was happening in this period in all undeveloped parts of the world, from Russia and the East to America and the West. Everywhere English coal, iron and machinery were needed; everywhere English-made railways were being laid down. Thus the abolition of customs duties brought general prosperity.

These great demands for British commodities led, during these twenty-five years, to a remarkable development in the numbers and the build of British ships. When the Navigation Acts were abolished our shipowners foretold ruin. Already the tonnage of the United States had risen since 1815 from less than half that of the United Kingdom to five-sixths. America, with the energy and originality which had produced the graceful fast-sailing clipper, was steadily gaining on us and bidding fair to take our place as the world's carrier. With the abolition of our Navigation Acts, American vessels appeared in numbers in our ports. America ran fast-sailing clippers to China to bring back the tea from Hong Kong, at half the rate that the British shippers could afford to charge. On the Atlantic a line of American steamers began to compete with the Cunard. By 1860 America's tonnage exceeded that of the United Kingdom.

But British shipowners had realized in time that new energy was demanded. They began to build clippers on the American model, long and narrow, with low hulls and a great expanse of canvas; and they built them of iron. As early as 1856 our ships were racing the Americans home from Hong

Kong with the tea, and winning the race. The Americans lost ground through their Civil War in 1862. By 1872 the British sailing-ship had outstripped the American and was at the height of her glory.* The steamer also improved in this period. The high rates for transport paid by Govern-

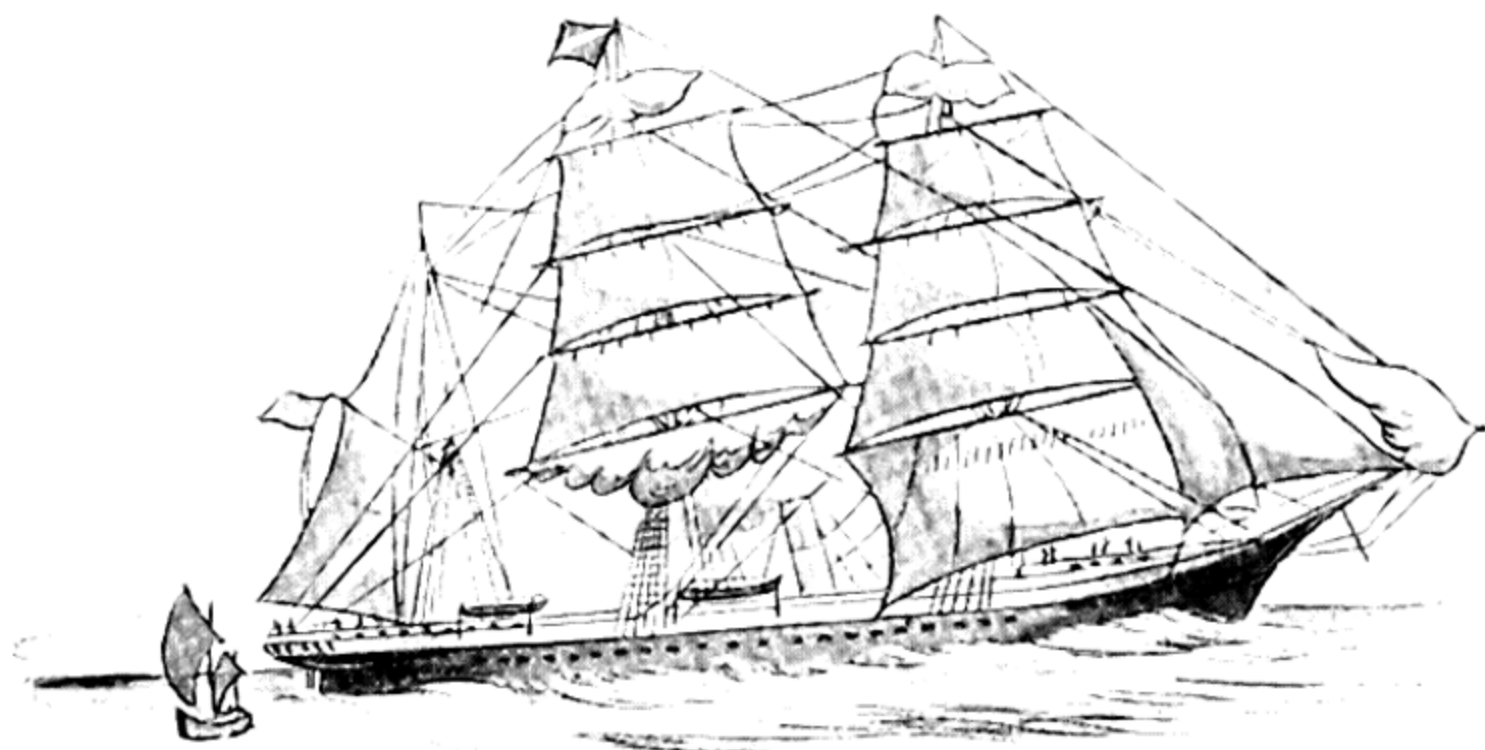


FIG. 21.—The Auxiliary Screw-steamer "Erl King," 1866.
From "*The Illustrated London News*," February 1866.

She was 1400 tons burden, and measured in the keel 245 feet; the beam was 34 feet, and the depth 22 feet. Her engines were 250 horse-power, and her trial speed rather over 12 knots. She was built for the Australia and China trade, which had hitherto been almost exclusively confined to sailing vessels pure and simple. "She has cabins of more than usual size, and convenience for fifty first-class passengers, and accommodation for 400 second and third."—*I. L. N.*

ment in the Crimean War gave a new start. Steamers were now built of iron; and gradually the paddle gave place to the screw. More important still, the invention in 1856 of the compound engine which utilized the power of a given volume of steam twice over in creating motion, halved the amount of fuel necessary, and thus increased the cargo space

* The "*Thermopylæ*" did the world's record sailing voyage from London to Melbourne in sixty days, and from Foo-Chow-foo to London in ninety-one days.

and lessened the cost. Many new steamer companies arose. From 1850 onwards, the Inman Line cheapened the passage for emigrants from Europe to the United States, and made the passage for poor people more endurable than before. Thus the great flood of emigration began. In 1851 the discovery of gold in New South Wales created a new stream of emigration, and in 1842 the P. & O. started a steamship service *via* Singapore to Australia. In 1870 the White Star Line from Liverpool to New York was founded. Foreign countries also started steamship lines, often with vessels built in England. Thus world transport developed.

Meanwhile in various civilized countries of the world railways were being laid down, and were bringing distant places into touch with the ports. Also there was growing up the electric telegraph, which had been invented simultaneously in 1837 in England and the United States, and which had been generally installed in both these countries from about 1845. In 1866, after many futile attempts, the first submarine Atlantic cable was laid from Ireland to Newfoundland. The French laid a second cable from Brest, in 1869, and in 1873 a line was laid from Lisbon to Pernambuco in South America, which was linked up with Britain by a line from Lisbon to London. Thus the electric telegraph brought traders of the two continents into rapid touch with each other's needs.

Another great development of world communication came in 1869 with the opening of the Suez Canal. It had taken the great French engineer, M. de Lesseps, ten years to build, and French energy and French capital had produced it. Yet British ships at once began to pass through it in the largest numbers. India, Australia, New Zealand and the East were brought nearer to Europe by thousands of miles.

Already, in 1869, China had been opened to British trade. By a shameful war in 1842, we had forced the Chinese to open

five ports, and to give us Hong Kong. By a second war in 1857 we won the opening of five more ports, with the right to travel and trade all over the country, to have an Ambassador at Peking, and Consuls at twenty-five ports. With Japan, at about the same time, we negotiated in less shameful fashion. Since the 17th century this ancient and wonderful country had been closed to foreigners, except to Chinese and a few Dutch. By royal decree in 1637 no native might travel abroad. But in 1854 the American Government obtained the right to send warships for coal and provisions to two Japanese ports, and the British Government asked for similar privileges. In 1859 a Treaty was made which opened five ports to our trade, and arranged for a British Ambassador at Yedo with Consuls at the ports, while a Japanese Ambassador and Consuls came to England. Yet another Oriental country hitherto closed to the traders of the West was Siam, rich in rice, teak, pepper and other tropical goods. A treaty of friendship and commerce in 1856 allowed British subjects to live and trade in Siam. Thus Eastern trade grew by leaps and bounds. The value of our exports to China rose between 1850 and 1870 from £936,000 to £6,138,000, and those to Japan from nothing at all to £1,615,000.

International trade brought friendliness. In 1851 the Crystal Palace was built in Hyde Park to house the first great International Exhibition. Raw materials, machinery, manufactures and fine arts were sent from all parts of the world, and six million people visited it. Other similar exhibitions were held in Paris in 1855, in London in 1862, in Paris in 1867, and in Vienna in 1873.

In the midst of all this material progress something had been done for the British seamen who carried the goods. An Act, passed in 1850, placed the merchant service under the supervision and control of the Board of Trade. The Act instituted for the first time examinations in seamanship

for persons intending to be mates and masters, and laid down that certificates of character, experience and ability were to be issued which the Board had power to recall and even to cancel, if the master or mate neglected his duty. Shipping offices were to be opened in all ports, and all men were to be engaged under signed agreements. The space on deck for seamen was laid down, and medicines and lime-juice and fresh vegetables when possible were prescribed. This Act was re-enacted in 1854, as part of the great Merchant Shipping Act of that year. This immense statute of 548 clauses laid down a clear code of law for the sea, abolishing countless old Acts which nobody remembered or understood. It made regulations about pilots, and about the management of lighthouses, buoys and beacons. It gave power to the Board of Trade to inquire into wrecks, and to stop the evil old custom of plundering wreckage. It was the first of a long series of Merchant Shipping Acts.

Nevertheless, the period of unchecked competition which opened with Free Trade made the ordinary seaman's life in many ways more hazardous than before. Though lifeboats were being instituted, the number of wrecks went up year by year. Ships went down with all hands on board, often in fairly good weather, and within sight of land. The Board of Trade reports proved that about one in every twelve wrecks that took place between 1859 and 1868 were due to defects in the ship, and one in every six to carelessness and neglect. This period of wealth and prosperity closed with the fearful charge made by Samuel Plimsoll, M.P., against a small but rich minority of shipowners, that they deliberately sent to sea unseaworthy and over-weighted vessels, which were heavily over-insured, and thus threw away brave men's lives in the scramble to grow rich. It was clear that unbridled competition needed Government interference and control.

BOOK LIST

Author.	Book.	Publisher.
Lindsay, W. S. . .	History of Merchant Shipping to 1875 (vol. iv.)	<i>Sampson, Low.</i>
Keble Chatterton, E.	(1) King's Cutters and Smugglers, 1700—1855 (2) Sailing Ships and the Story of their Development	<i>Allen.</i> <i>Sidgwick & Jackson.</i>
Lubbock, Basil . . Plimsoll, Samuel	The China Clippers Our Seamen: an Appeal, 1873	<i>Brown.</i>
Parliamentary Papers	(1) Report of the Committee on the State and Condition of the Mercantile Marine, 1844 (2) Answers of Her Majesty's Consuls relating to the State of the Commercial Marine, 1848 (3) Report of the Committee on the State and Management of Lighthouses, 1834 (4) Report of the Commission on the Condition and Management of Lights, Buoys, and Beacons, 1861	<i>H.M. Stationery Office.</i> " " "

CHAPTER VII

WORLD TRADE, 1875-1925

UP to the year 1875 Great Britain had been the foremost trading nation of the world. After 1875 we were slowly to lose that position. Yet the change meant for us not ruin but a great expansion. The commerce of the whole world increased so much that in 1913 our overseas trade was nearly twice what it had been in 1880.

I. 1875-1900

In 1875 many countries which are important at the present day hardly contributed anything to the commerce of the world. Chili, Brazil, and the Argentine, Cape Colony and the Transvaal, Rhodesia and Nigeria, were almost negligible for our merchants. Russia was inaccessible or nearly so. There were only two Russian railways, one from Berlin to St. Petersburg, the other from Moscow to Nishni Novgorod; and beyond Nishni eastwards to the Pacific coasts of Asia, the old caravan and river routes were still the only highways of commerce. China sent little to Europe except tea, Japan still less. New Zealand and Australia, the wool-trading countries, had as yet no commerce in frozen

meat, for the freezing process was not yet perfected.* Thus there were many spaces almost blank upon the commercial map of 1875.

There were two countries, the United States and Germany, which in 1913 stood with Great Britain at the head of the world's commerce. America was in 1875 a vast agricultural country, sending merely raw materials into the world-market; she was the greatest source of supply for tobacco, rice, and cotton, her old staples. By 1870 she was adding to these wheat and meat, for the central and western provinces were beginning to be settled.† Yet in 1869 a tourist could still write: "On leaving Chicago, the traveller may be said to bid farewell to civilization." Chicago itself had a population of 300,000 people, as against more than 2½ millions to-day, and its meat-packing industry, which is now so gigantic, was as yet only local.‡ We exported to the United States our manufactured textiles, our machinery, our engineering and mechanical goods, and, in short, our manufactures of all sorts; as we have shown, Andrew Carnegie remembered how the rails for the first American railways were bought from England. Besides, English merchants were the main purveyors to America of the wares of other European countries. For instance, scarcely any glass was made in the States, and Americans bought it in England, but much of the glass they bought in London was made in Germany. Englishmen, too, were the principal sellers of American goods to Continental

* Anthony Trollope "heard of" frozen meat in New South Wales in 1873, but not in Queensland. He says of the tinned meat then made that his English servants would not have looked at it.

† By 1880, settlement was practically continuous from sea to sea, though still sparse over great areas.

‡ Its extension was just about to begin; it depended on three causes. First was the increase of the numbers of hogs and steers sent by the new farmers of the west; second was the invention in 1869 of the refrigerator-car, which made summer-killing as important as winter-killing; and lastly the invention in 1879 of a really air-tight sealed can.

buyers ; there was little direct trade between New York and Hamburg or Paris.

Secondly, Germany was still in the main a nation of farmers, although her transition was beginning. She sold a vast amount of foodstuffs, corn, wine, beer, and smoked hams to the various countries of Europe. The north of Germany was still a land of farms and villages, and little towns where people lived with great simplicity.* Manufactures there were, but they were carried on mainly in Saxony, Bavaria, and Baden. Dresden china, Saxony linens and cottons, Black Forest clocks, and Bavarian glass, leather work and jewellery—the historic productions of the German handicraftsmen—were the main goods which Germany offered to the world. Her great deposits of coal and of iron were hardly worked. The Ruhr district was still a pretty countryside of wide ploughlands dotted with farmhouses, although the sheds and mine shafts of coal-mines, and even the great furnaces of the ironworks, were beginning to be seen in the fields. Dortmund on the Ruhr was still practically contained within its mediæval walls, and Essen, now a great industrial town almost as big as Leeds, was only half the present size of Tunbridge Wells. German merchants still bought English coal and iron, and British manufactured goods ; they also obtained from England the “Colonial wares,” as they called them—tea, coffee, sugar, rice and sago and tapioca and spices—from India, Egypt and the Tropics.

Such was the trading world in 1875.

Between 1875 and 1886 a deadness seemed to have fallen on our foreign trade. After a year or two of these bad times,

* In Hanover, now a very large town engaged in heavy metal industries, life was so simple about 1865 that people still walked to the theatre lantern in hand, and even ministers of the Hanoverian Crown went thither on foot, with a maidservant carrying the light.

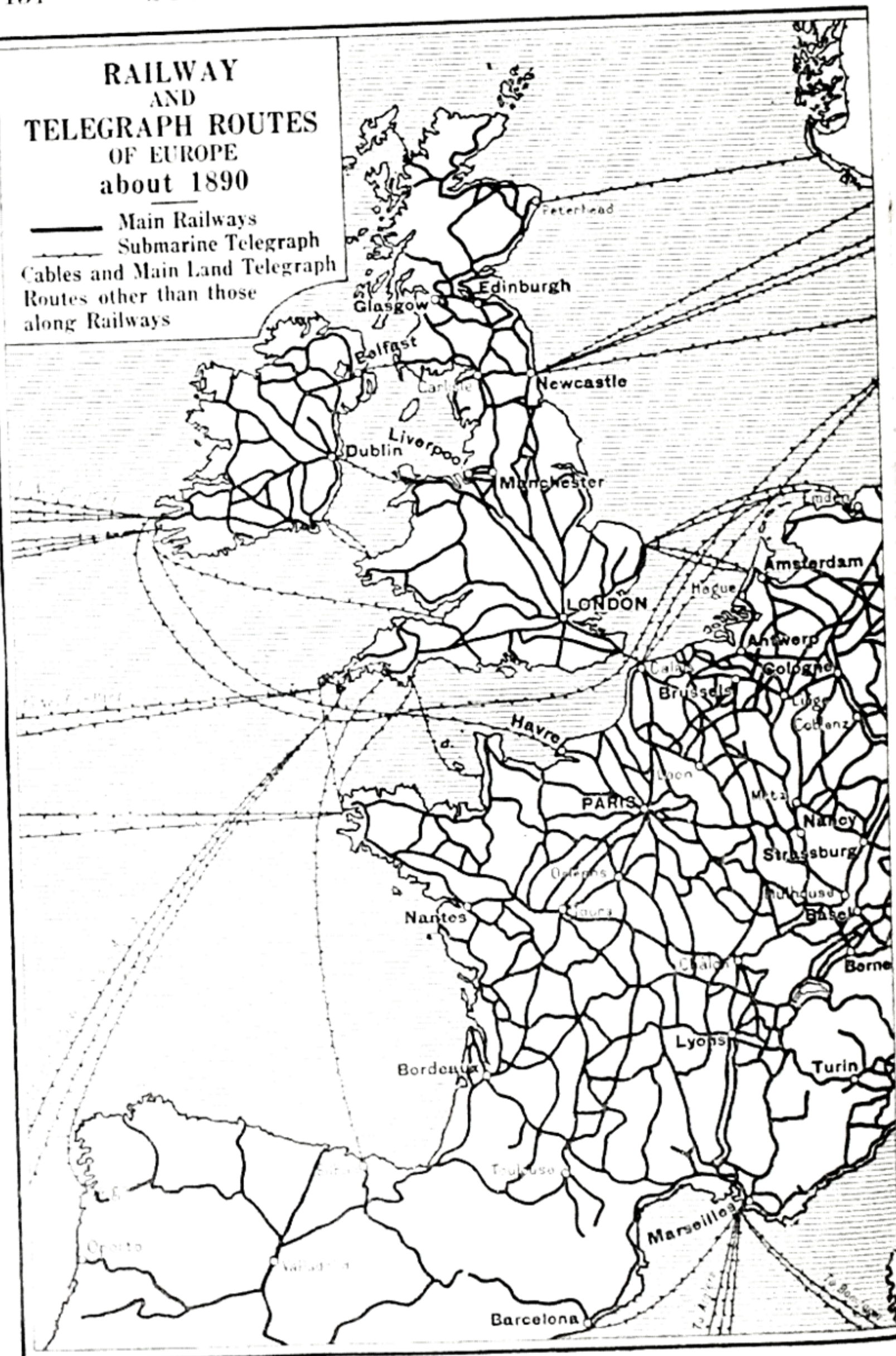
British merchants and shippers became very gloomy about the whole future. It was quite true that our foreign trade was not increasing as it had done in the previous generation. The reason was that our chief customers, Germany and America, were hard at work spending their labour on making railways and canals, factories and warehouses, telegraphs and telephones. In 1860, America had but 30,000 miles of railway in her vast area, and only one transcontinental line. About 1870 she set to railway building; by 1890 there were over 163,000 miles of track, the new lines being largely in the "grain States" of the centre and west. Because Americans were putting their work into construction such as this, they were not producing increased quantities of wares to send away, and hence they could not take our manufactures in such large quantities as before.

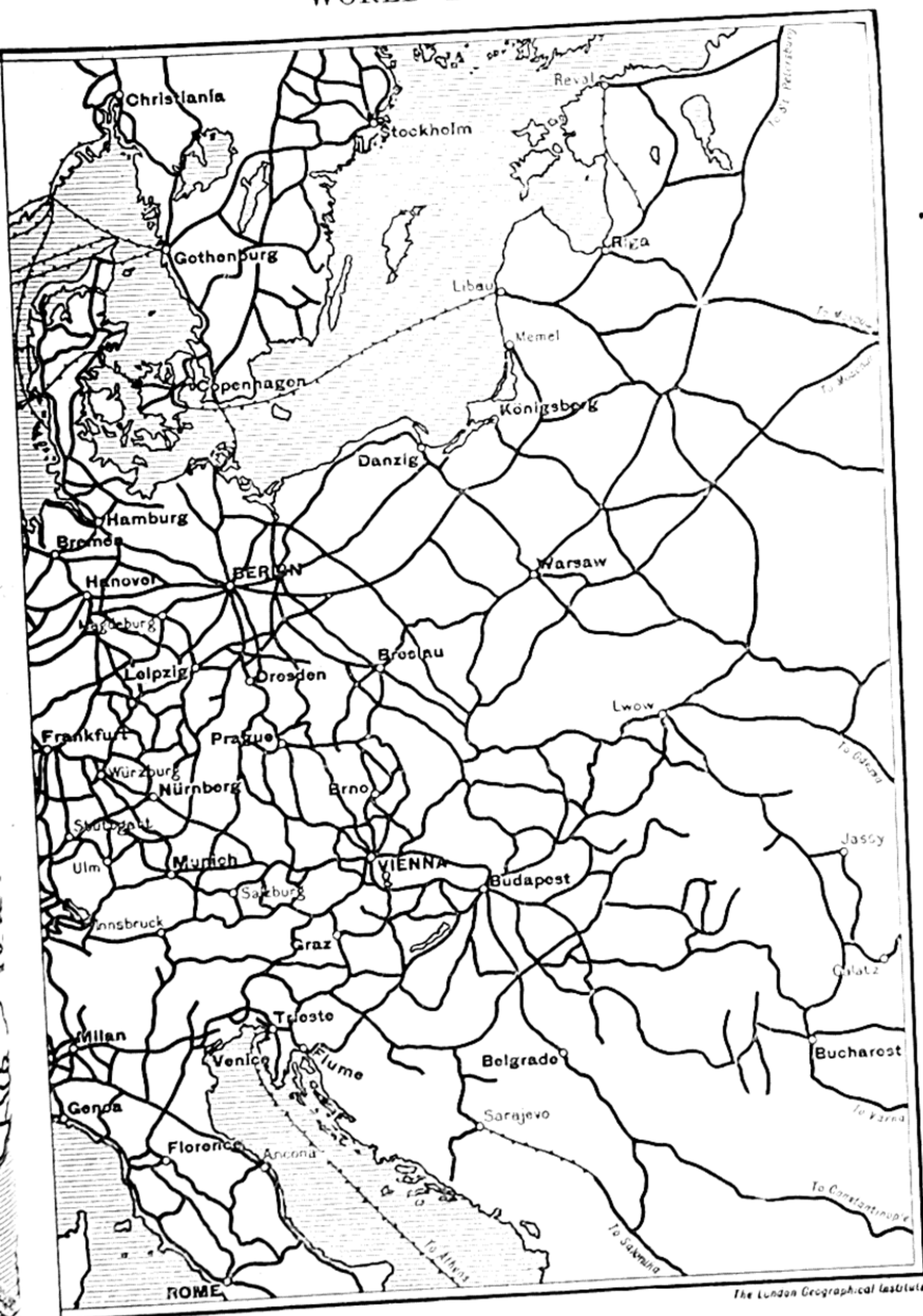
Between 1890 and 1900, however, there was a general revival of our foreign trade, so that many men who had been depressed and anxious began to prosper. Two new influences were at work. First, the very constructions that had absorbed work and capital in the previous bad years—the new lines of railway in Europe, Asia, and America, the transcontinental and transmarine cables—were now serving to open up new districts. Second, the invention of new ways of preserving all kinds of foodstuffs helped trade, because many foods now became for the first time articles of world trade.

The main railway lines of Europe in 1890, and the main telegraphic systems, are shown in Map III. Outside Europe, railways had been built in great numbers. By 1897 the Trans-Siberian Railway had reached Port Arthur and Vladivostock and Peking. A line was open from Bokhara to the Caspian, and another from Moscow to Sevastopol. Railway building had also begun in South Africa, Egypt and

RAILWAY AND TELEGRAPH ROUTES OF EUROPE about 1890

— Main Railways
- - - Submarine Telegraph
Cables and Main Land Telegraph
Routes other than those
along Railways





The London Geographical Institute

the Argentine. In America, canals had been superseded by railways, and then, by about 1880, the short local lines were being amalgamated, and the great routes for fast through traffic were being organized. By 1897, there were three transcontinental railway routes. Moreover, four electric cables had been laid between America and Europe; of these, three connected the United States with England. Thus by about 1890, merchants could hear of the needs of distant markets, and could move goods about the world in a way impossible in 1875. At the commercial sale-room in Mincing Lane, the London headquarters of the trade in rice, cloves and spices, Reuter's telegraphic messages from all parts of the world were posted up. In the Manchester cotton exchange changes of price in every cotton-market could be traced from hour to hour.

The other great factor in the development of overseas trade in this period was the introduction of artificial freezing. By 1869 the Americans had managed to use natural ice for this purpose, and refrigerator-cars were running between Chicago and New York. But scientists could see that intense cold could be generated without using ice, either by taking all the warmth from air, or by making an intensely cold liquid, which had a temperature far below the freezing-point of water.

By about 1870, both those ways had been successfully practised on a small scale, both in Europe and in Australia. In both, the question was a very practical, commercial one, for the possibility of securing meat supplies from Australia had long been foreseen. It remained to invent a freezing plant able to keep up the cold throughout a long sea voyage. By 1879 this was successfully accomplished. In 1879 the first cargo of frozen meat from Australia was landed at the London docks.

TABLE SHOWING THE GROWTH OF OUR TRADE IN FROZEN MEAT.

To England from	Beef.			Mutton.		
	1888.	1899.	1923.	1888.	1899.	1923.
Australia ..	cwts. 864	cwts. 609,216	cwts. 712,127	carcasses. 112,214	carcasses. 11 mill.	cwts. 652,809
New Zealand	40,490	134,427	—	939,231	3½ mill.	811,895
U.S.A. ..	784,429	2,756,796	1 Tinned (31,520)	—	—	—
Argentine ..	3,678	150,368	1 Tinned (½ mill.) 9,105,988	1 nearly (1 mill.)	21 mill.	1,076,296 and nearly 3 mill. cwts. lamb, chiefly from Australia and New Zealand.

A ship that is built for this huge trade has a hold, or part of its hold, "insulated," that is, surrounded with material that does not conduct heat. In this hold the carcasses are laid. Pipes, in which the cold-bearing "brine" is conveyed, run under the planking of the deck, that is, along the ceiling of the hold. On deck is the house where the cold-generating engine is worked. The temperature is kept at about 15° F. for frozen meat, or 30° F. for chilled meat. Beef and mutton carcasses, poultry, fish and game, and even fruit, travel from Australia or New Zealand, and arrive quite sweet at the London docks. The vessels come into the West Indian or Surrey Commercial Dock, and the carcasses are hustled into the great freezing warehouses. From these warehouses the meat is sent into the London markets in special "insulated" vans, and from these markets it is bought for distribution all over England, for all the Australasian trade comes to the port of London. The direct result of this invention was a quick increase in our trade with these Colonies, which could now offer us the foodstuffs our population needed increasingly.

The forces referred to above also caused the growth,

between 1890 and 1900, of our trade with Germany. It began to increase again rapidly, for reasons like those at work in our commerce with Australia. Germany had new goods and more goods to exchange for ours. Hitherto, her manufactures had been chiefly in the south, but now in the north also factories were being built. The main new manufacture was that of beet-sugar, made from roots grown on the great North German plain. Besides, in the Ruhr,

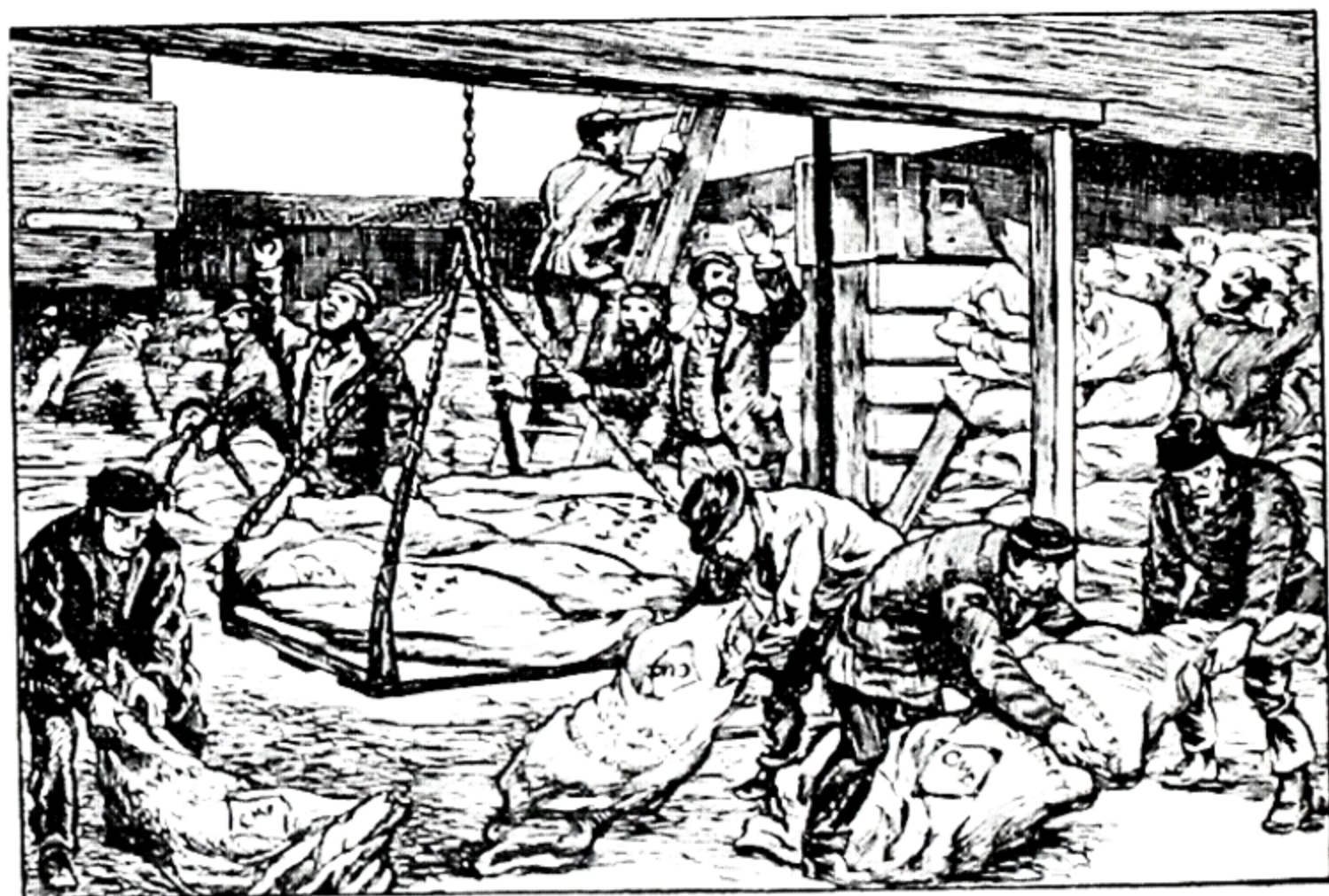


FIG. 22.—Landing Australian Frozen Meat at the Docks, 1881.

From "The Illustrated London News," 1881.

and in other places throughout Germany, iron and engineering works were beginning to be built or to grow large, and fresh coal-mines were being sunk, for coal lies in many districts in Germany. All this gave work, and as farmers and work-people earned more money, they wanted better clothes and more varied food. Business men, too, wanted better machinery for factories, mines, and workshops. All these things could be bought in England. Thus, in addition to increased quantities of cottons and woollens, our old exports,

we sold to Germany in even greater quantities our coal, and our steel and iron goods; in return we bought of her beet-sugar * in addition to her older goods.

With America, too, our trade increased, for our demand for wheat and flour, and beef and mutton, was growing year by year. Nor did the character of the trade change, as yet; we still sold our manufactured goods of all sorts to the States.

We also began to deal largely with new customers. Of these, the Argentine was one. Until about 1880, during constant civil wars, agriculture had been so precarious that the people themselves were often almost starving. Crops were destroyed and cattle raided; as to foreign trade, the Argentinos exported a little "jerked" (sun-dried) beef to their nearest neighbours. Within ten years of the establishment of peace in 1881, they were exporting large quantities of wheat, live cattle, and carcasses. In 1889 the first cargo of cattle from the Argentine was landed in England; and already English merchants were sending out our goods, establishing offices, and finding money for railways. Argentina rose to be one of the chief granaries of the world, rivalled Australia in wool-production, and excelled even Australia and America in the quantity of her frozen meat.

"England buys anything the Argentine has to sell, and in any quantity," wrote a merchant, "and this furnishes cargo for northward-bound ships. In return she sends manufactured goods and coal. . . . The English Boards of Directors of English-owned Argentine enterprises naturally give preference to English supplies."

Thus it came about that, about 1900, English merchants did twice as much business with the Argentine as those of any other country.†

In the years between 1875 and 1914, the old sea life gave way finally to the life of the steamship. Had this change

* In 1902 we bought German beet-sugar to the value of £9,000,000.

† The Americans came next, and then the Germans.

not taken place, our shipping would not have kept its pre-eminence in the ports of the world.

Just as, in 1875, certain English manufactures had almost a world-monopoly, so English vessels almost monopolized the great sea-routes of the world. Our merchant fleet was still a sailing fleet. Of the 10,000 "foreign-going" merchant vessels of 1865, over 9000 were sailing-ships. In the 'seventies, the main types were the two similar vessels, called the barque and the ship. They were both three-masted, iron-built boats. For the most part they were built for space, rather than for speed. Yet they were most beautiful on the water. They can still be seen here and there, for instance, in the Swedish timber trade. Some of the men who worked them loved them. One sailor wrote in 1910, about an old barque :

"Though yet staunch and seaworthy, she stands condemned by modern conditions, conditions that call for a haste she could never show, for a burthen she could never carry. . . . And of her crew, the men who manned and steered her? Scattered afar on seven seas, learning a new way of seafaring; turning the grip that had held to a line aloft to the heft of a coalman's shovel; the deft fingers that had fashioned a wondrous plan of stay and shroud to the touch of winch and lever." *

These ships laboured all over the world; their routes, determined by the course of winds, were far longer in actual mileage than the routes of steamers.†

But among the three-masted vessels of this time, there was one type in which all else was sacrificed to speed. This was the "tea clipper" ‡ whose racing skill has already been described. Besides the barques, clippers, and ships, there was another sort of fast vessel, called the schooner. It was two-masted, and lighter and quicker than the barque.

* David Bone, "The Brassboulder."

† They survived until the war in the Indian jute trade, the Californian grain trades, the Chilean nitrate trade, and the nickel ore trade with New Caledonia. On the outward voyage, they carried coal.

‡ See pp. 126 and 141. One of these, the "Cutty Sark," has been called over and over again one of the most beautiful things ever made by man.

As schooners had not much cargo-room, they were specially used in trades where small quantities of perishable goods were carried. For instance, English schooners plied between our southern ports and the Mediterranean carrying oranges and lemons ; they were known as " the fruiterers," and among their captains there was the same rivalry and pride in speed as among the clipper captains.

But by 1875 iron steamships were driving these beautiful vessels out of these fast services. In the preceding period, steamers had been introduced as passenger boats. Mr. Currie added his first steamship to his South African sailing fleet in 1872. About the same time, on the Indian and Chinese voyages, even the swiftest sailing-ships were being beaten by steamers. The Suez Canal had been opened in 1869 ; coaling stations were made at Port Said and Aden ; and thus steamers could re-coal, and keep up a steady pace all along the route. In 1869 the last and swiftest clipper race from China took place.*

The iron steamers were built chiefly at Newcastle, Sunderland, and Hartlepool, from the iron of Durham and Yorkshire. In these yards, the naval engineers were constantly striving to increase both the speed and the cargo-space. By 1875 they were already using a new, more powerful marine engine, the compound engine. In the ordinary steam engine, the steam passes into a single cylinder, does its work by pushing against a piston, and then is expelled. Long ago, Watts had seen that this steam had a good deal of power left in it, and he had used it for minor purposes. But later inventors had devised a compound engine. The steam passed first into a small cylinder, and worked against a piston there at high pressure ; then it passed into a larger cylinder, where it still had quite enough strength to work a piston again.

* *The fruiterers survived until the 'eighties, because on a shorter voyage they were cheaper than steamers.*

Lastly it was used in some engines in a third cylinder. Thus the steam produced by the quantity of fuel did two or three times the work it would have done in an engine with one cylinder. At sea, where the space for coal was so limited, this economy of fuel and steam power was most valuable. So important did the compound engine become, that sailing-vessels, which were already almost as perfect as they could be, fell farther and farther behind ; and even among steamers, those which had the old single-cylinder engine were looked on as very inferior. By 1895, the compound engine was almost universal in our merchant ships.

But, indeed, with the revival of trade about 1890, ship-owners quickly began to explore new routes and new inventions ; and in the next twenty years, shipping changed so fast that men who sailed the ships of 1875 seemed to belong to another age.

First, in our "foreign-going" cargo-boats, or tramps, change now came quickly from sail to steam. In 1895 there were nearly 4000 steamers, and only 2000 sailing-ships, as against the few hundred steamers of 1865.* English ship-building yards had been slack in the later 'eighties, but by 1890 Britain held a larger proportion of the world's shipping than she has ever held since, actually rather more than half, and of these ships most were steamers.

There was a great change in the total size, and also in the carrying capacity, of cargo-boats. There were two causes which made this possible. The first was the compound engine and the screw propeller which came along with it. The second cause was the coming of steel as a shipbuilding material at the beginning of the 'eighties.† Its advantages were great ; it admitted of a larger scale of construction,‡ especially

* See p. 145.

† The first steel liner was added to the Cunard fleet in 1881.

‡ In 1865 the average size of a cargo steamer was 653 tons ; in 1894 it was 1400 tons.

in the making of the hold; a steel framework did away with the need for support and pillars, which had hitherto occupied much room. It was from about 1880 that the steel ship-building industry began on the Clyde.

Thus the cargo-boat became a wonderful structure, mechanically propelled—a task for the engineer, rather than for the old-fashioned A.B. The old sea life began to

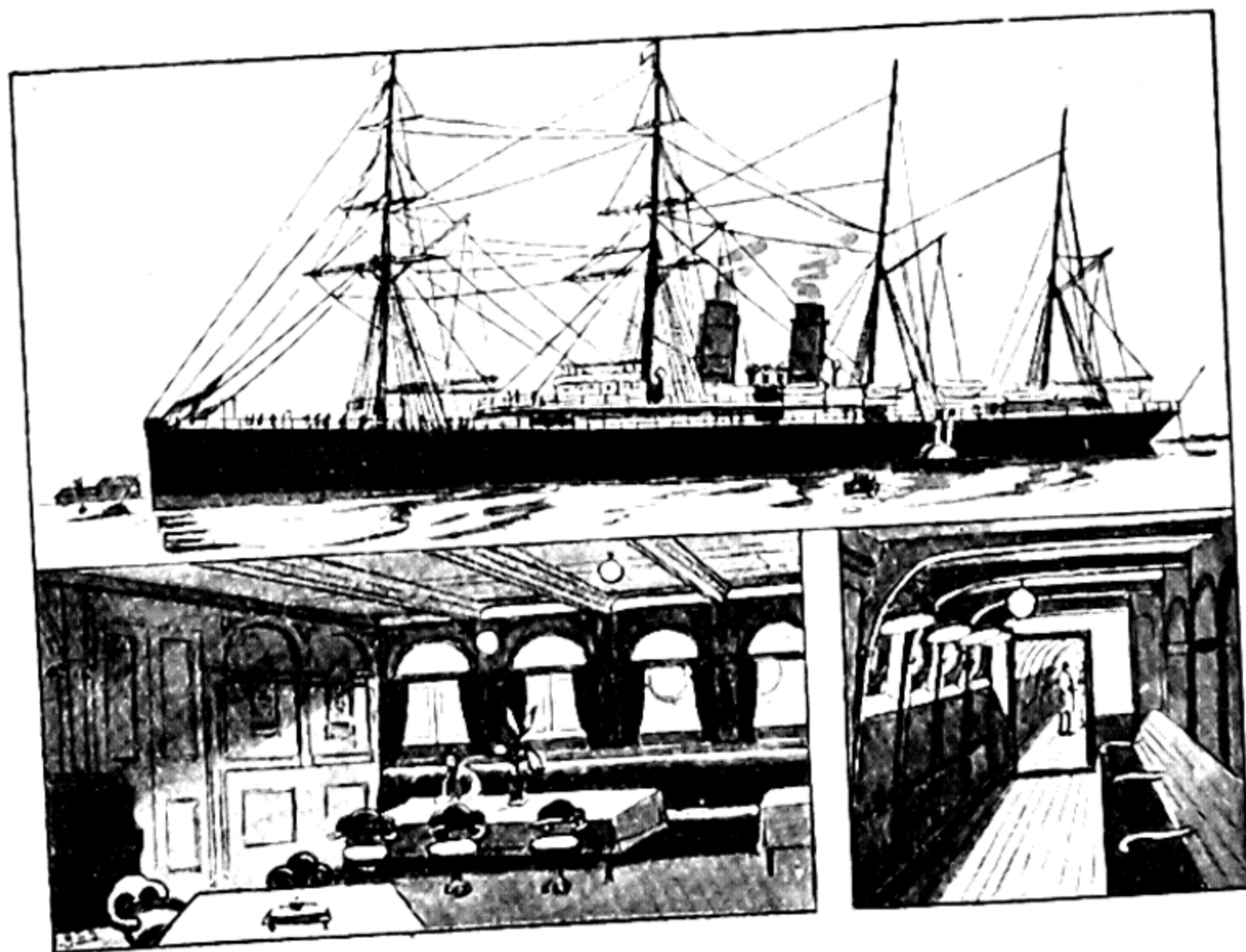


FIG. 23.—An Early Steel Vessel.
From "*The Illustrated London News*," 1882.

The *Austral*, the second vessel of this type built for the Orient Line.

alter, and a new sea life, whether better or worse, to take its place.

The captain or master of the old days has been described on p. 129. The captain of a "tramp" of 1890 was no whit inferior to him in the adventurous spirit. He was prepared "to sail at short notice with any sort of goods to any sort of port." But the book knowledge and technical knowledge,

which some old captains scouted, the shipmaster of 1890 needed. An experienced sailor wrote in 1897 :

“ The shipmaster must read if he does not mean to be left behind in the race. In the good old days, a man's knowledge was ground out of experience, but everything travels too fast for this in modern times, and unless the sailor . . . makes use of the experience of others by reading, he will never succeed.”

The master had to have experience ; for six years he served at sea before he could take his examination by the Board of Trade ; he could not go in for this unless he had also taken the mate's examination. In 1895, when ships were getting larger, fewer masters were needed, and there were great complaints that the Board allowed far too many men to pass. For no man was now fit to command who did not know things quite outside the view of the older master. For instance, Acts of Parliament gave him great responsibility for the condition of the crew ; he had to know something of sanitation and health, not at all necessary fifty years before.

In one sense, the master was less independent now. Of course, he was an absolute ruler on his ship ; but it was a new experience, as the world was roped about with telegraph cables, to receive orders from the owner, at some port on the other side of the globe.

“ Up to the middle of this century, the owner at home knew very little as to what his ship was doing . . . until her return home. In the foreign port, the ship's business was entirely under the master's control. The agents presented to him such freights or passengers as were forthcoming, but the final aye or nay as to rates . . . or passage money rested with him. Such a state of matters demanded the utmost confidence between the shipowner and the master. . . . But the last fifty years have made vast changes in such relations. The speed with which messages are now flashed round the world enables the owner to conduct his business almost from his own office chair, and has rendered the necessity for the master's interference . . . gradually less and less.”

Indeed, since the telegraph came, sometimes the masters actually do not know what their course is to be.

"Ships leave the Argentine Republic every week of the year loaded with wheat, the final destination of which is unknown to anyone. When these ships arrive at some intermediate telegraphic point, within striking distance of the ports of Europe, orders are received to go here or there, as the most profitable market may present itself at the moment."

Under such circumstances, the master is no longer a trader at all.

By 1890, the crew also was altering, largely in consequence of the change to steam. All the old sea lore of ropes and canvas was now useless. In the old days, boys went to sea at ten and eleven, so as to catch the knack of handling cables and ropes while they were young; but by 1890 many sailors said that it was much more useful for their boys to stay on shore and attend a good school until the age of fifteen. On shipboard there was less of the old all-round rough work. For instance, in many cases the sailors no longer loaded and discharged cargo. The charterer of the ship usually employed stevedores and their gangs, and well it was that he did, for on the skilled loading of heavy goods, and coal, depended part of the safety of a ship in rough weather. Even for the stevedore's gangs, the mechanical methods used in well-equipped ports were lightening the work. For instance, in the port of London in 1904 grain was unloaded by means of a centrifugal pump.

"The centrifugal pump draws the grain out of the hold just as the dredger pump draws the sand from the . . . river bed," wrote a sightseer. "You may see the conical heap grow bigger and bigger, higher and higher, with a constant trickling of the grain down its sloping sides. Said a dock overlooker to me once, as I watched, 'Ah, there's a difference from old days, sir! Then it all had to be carried ashore on men's backs. You'd see a string of men staggering up a plank to shoot their load, with their eyes blazing out of their heads.'"

On the other hand, a sailor had now to study his profession in books, as well as practically. A great change from the days when reading was looked on with scorn! Before 1849, every seaman had been bound apprentice and had served for six

or seven years. Then in time he became an ordinary seaman, and later an able seaman. By 1895 hardly any boy started before fifteen; and the better general education he had, the better his chances. Hardly any boys were bound apprentice; a sailor said that apprentices seemed to have gone out with sailing-ships.* Owners did not want their captains to be troubled with them, unless special fees were paid, so that the few apprentices of 1895 were the rather better-off beginners, who could pay a premium to the ship-owner. For it was to the owner, and not to the master as of old, that the apprentice was now bound. The ordinary unapprenticed boy served at sea long enough to become an ordinary seaman. But to reach the rank of mate, the mate's certificate examination must be passed. In many ports† there were "coaches" who gave lessons to sailors while their ship was in harbour, and between times many sailors worked at technical books by themselves.

The crew now included the engineers and their stokers and firemen, men who, living in the hot depths of the ship, differed completely from the deck-hand, and bore a great part of the responsibility for the ship's safety. They were at first quite strange in work and ways to the old customs of the sea. In the early days they were often men recommended by the maker of the engine to the owner. Even in 1897, they were in some ways more like landsmen than the others.

"The engineers are men who receive their early training on shore, being bred to their business in the machinery works of the country, where they are taught not only to use, but the construction of the machines they are hereafter to control as sea-going engineers."

Since 1862, however, the ship's engineer has been able to take a certificate, and by 1897 there were very few of the old

* It was true, indeed, that when the Navigation Laws were abolished in 1849, the compulsory apprenticeship was done away with also.

† E.g. in the ports of the Bristol Channel.

unqualified men left. Thus the qualified engineer was accepted as one of the ship's officers.

With the triumph of the steamship, the sailor's life grew in some ways more dangerous. For economy, owners sometimes stinted the number of men. In 1865 the average crew of a steamer had been about thirty-two men, and in 1895 it had not increased at all for ships averaging double the size. Very often the vessel and its working expenses were so costly that the owners economized unjustifiably on the wages bill. Moreover, some owners tried to get more voyages out of a ship than was right: every stay in port had to be shortened, if possible, and goods hastily stowed away got loose, and did serious damage, at sea.

To cope with another form of carelessness, and even guilt, a member of Parliament, Mr. Plimsoll, began his work in 1868* to protect sailors from "floating coffins." A Royal Commission investigated in 1873, and in 1875 Parliament passed the Mercantile Shipping Act called "the Plimsoll Act." It forbade the loading of ships above a line, shown by a mark, "the Plimsoll mark," and it ordered the Board of Trade to inspect every ship, and stop its departure if it was not satisfactory. The Act as it was passed made strongly for the safety of sailors.† Moreover, the extension of the telegraph helped too. Lloyd's daily service of reports show whether a ship has arrived duly in time at her place of call, so that if a ship is missing or much overdue, she can be searched for.‡ All such measures are very necessary. For the English "tramp" goes out with a cargo, delivers it, and then takes up whatever cargo is offered, for any port required.

* See p. 148.

† Changes have since been made in the arrangements for inspection, etc., which have increased its effectiveness.

‡ 12,000 telegrams reporting ships' movements were sent and received by Lloyd's in 1875, and in 1915 nearly 100,000.

Many of the tramps follow no definite routes. One voyage, a fast trip, is described thus :

" Leaving Glasgow in ballast for Philadelphia [the vessel] loaded up with cases of oil. These were destined for Japan, and, in order to save canal dues, the vessel travelled via the Cape. In Japan she picked up a cargo of rice, and took it to Brisbane in Australia. From Brisbane she sailed to Tasmania, and thence back to Bombay, whence she proceeded to Burma, where she loaded up with a cargo for Buenos Ayres. From Buenos Ayres she rounded Cape Horn with a cargo for Chile, and thence she sailed in ballast for San Francisco, and Portland, Oregon. Here she took on board a cargo for Japan. From Japan she went to Java, and from Java she set sail again with a cargo of sugar for Greenock."

With ships and men able to perform voyages like this, the British merchant fleet remained the greatest in the world,* and bore the goods of all nations over every sea.

II. 1900-1925

In the years of trade revival, between 1890 and 1900, some clear-sighted men were already looking to the future. Visits to Germany and America in particular had shown them that very soon must come radical changes in the character of British trade.

The period since 1900 has shown that they were right. We were now to lose our position as the world's one great manufacturer, which we had held because of our pioneer work in the Industrial Revolution. This was a vital change, profoundly affecting the lives of our workmen, manufacturers, and traders, and indeed of our whole people. We are still witnessing it at this very day.

One main cause was the development of Germany and

* Merchant shipping of the world :									
1907	British Empire over 17 million tons.				1914	over 20 million tons.			
U.S.A.	"	4	"	"	"	5	"	"	"
Germany	"	3	"	"	"	5	"	"	"
Norway and									
France, each,	"	2	"	"	Norway mostly in small vessels.				

America between 1900 and 1913. Both countries passed out of the stage of manufacturing for the home market only; both became sellers of wrought goods in the markets of the world. In 1913 an American wrote :

“ America, England, Germany, these three nations are by far the greatest providers for the human race, in virtually every line of human endeavour.”

In America, the two greatest factors were the development of coal and of iron. Coal had been mined on the western slopes of the Appalachian mountains for many years. But in the last quarter of the 19th century other coal-fields were either discovered or freshly developed. The deposits in Michigan had been discovered in 1835, but were only developed on a large scale after 1895. The Colorado coal-field was discovered in 1864, but it only began to give a large yield after 1880. The mines of Virginia, too, were worked much more vigorously towards the end of the century. By 1900, the United States produced more coal than even England. But she exported very little of it, for by that time she had become a great iron-working nation. In the United States there are two great sources of iron ore. The Appalachian iron-field, lying close to the coal, has long been known. Yet, for long, the deposits were little worked, for the ore was so impure it could not be used for steel. Not until 1880 was the second great American iron-field discovered. It lies at the head of Lake Superior. Its ores are of the finest quality, and lie so near the surface, that they are actually “ scooped ” direct into trucks. Very quickly did the Americans develop the making of fine steel from these ores. As to pig iron, by 1902 America produced 40 per cent. of all the pig iron in the world. This was a greater share than those of England and Germany put together. On this basis of native iron and home-made steel, a vast number of industries sprang up. Not only did America make all such metal goods as we had

made, but many new things as well. Typewriters and telephonic instruments were among them, and in 1900, only five years after the motor-car became a practical working machine, there were already fifty-seven American motor factories. Exports of manufactures increased steadily. In 1910 they were nearly equal to the exports of farm produce.* This fact itself meant a complete change in the trading position of Britain; it was no longer possible for her to be supreme, as she had been in 1870.

A similar change took place in Germany. A land of farmers and peasants in 1875 had become, by about 1910, a land of factory hands, miners, and railwaymen. By 1910, only about a third of the German people were still working on the land. Before 1870, Germany was cut up into the small old kingdoms and duchies of the 18th century. On the boundary of each little state stood customs houses where officials levied duties on all manner of goods. Moreover, the rulers and statesmen of each kingdom thought and worked for that one only. In 1870, the German Empire was founded, and the whole German nation became, for many purposes, one country. Its rulers were alive to the importance of trade, and did all they could to help trade to circulate through the land as a whole. Thus, after 1870, the new political state of Germany helped instead of limiting the growing trade-life of the country. The full effects of this growth had become unmistakably clear in the years after 1900. Whole districts, like that of the Ruhr, had taken their modern, industrial character, and had begun to look like Lancashire or Staffordshire. Almost every German now alive has seen this change to some extent; he has seen the building of factories, or electric works, or workmen's flats, or the laying down of light railways through the fields. By 1910 Germany

* In 1910 America exported agricultural produce valued at 934 million dollars, and manufactures valued at 766 million dollars.

was rivalling us in some of our own long-established trades, such as the smelting of iron and the making of certain kinds of textiles. In some new trades, such as electric work, and in some highly scientific businesses, such as the manufacture of dyes, German goods were selling even better than English ones.

In spite of the fact that by 1913 these two great nations had become our trade rivals, British exports were still on the increase. The following table illustrates their growth between 1891 and 1909 :

BRITAIN'S LARGEST EXPORTS AND THEIR VALUE.

	1891.	Value.
Cotton goods and cotton yarn	over £71,000,000
Iron and steel goods	nearly £27,000,000
Woollen goods and woollen yarn	about £22,000,000
Coal	nearly £19,000,000
Machinery and engines	£15,000,000
Metal goods (other than iron and steel)	nearly £6,000,000
Linens	nearly £6,000,000
Ready-made clothes	£5,000,000
	1909.	
Cotton goods and cotton yarn	over £71,000,000
Iron and steel goods	£38,000,000
Coal	£37,000,000
Woollen goods and woollen yarn	£30,000,000
Machinery and engines	£28,000,000
Chemicals	£16,000,000
Linen and other materials	£14,000,000
Ready-made clothes	nearly £10,000,000

The next table shows the value of our trade with Germany in its main branches, in 1893 and in 1912.

A. TRADE BETWEEN BRITAIN AND GERMANY IN 1893.

Goods sold to England.	Value.	Goods bought from England.	Value.
Sugar (beet) ..	Over £9,000,000	Woollen goods	Nearly £3,000,000
Woollen goods	£1,000,000	Cotton goods ..	£2,500,000
Wood	£1,000,000	Coal	Over £2,000,000
Corn	Nearly £1,000,000	Metal goods ..	Nearly £2,000,000
And other goods of less value.		Machinery ..	£1,500,000
			And other goods of less value.

B. TRADE BETWEEN BRITAIN AND GERMANY IN 1912.

Goods sold to England.	Value.	Goods bought from England.	Value.
Sugar (beet) . .	Nearly £7,000,000	Precious metals	Nearly £13,000,000
Part-silk stuffs	£2,300,000	Coal	£7,000,000
Pig iron, etc. . .	£1,500,000	Woollen goods	Nearly £6,000,000
Woollen goods	Nearly £1,500,000	Cotton goods . .	Nearly £5,000,000
And other goods of less value.		And other goods of less value.	

The reason for this increase was simple. If a nation makes more and more of its own goods, it can exchange a larger surplus beyond its own needs for an increased amount of foreign goods. In 1912 Germany could buy three times as much coal, and nearly twice as many cotton and woollen goods as she had purchased in 1893, simply because she herself had dyes, and coarse woollens, and pig-iron, and toys, to send us in exchange.

Other countries, too, began to be great buyers of our goods as they themselves developed—for instance, Japan and Russia. In 1912 Japan imported from us direct nearly a quarter of all her imports; before 1892 her trade with us had been small. Russia was even later in her growth. Between 1902 and 1911 her foreign trade doubled, and great chances of new business opened to our merchants there. It was because we had men able to take advantage boldly of such chances, that our trade prospered. One such man was Mr. Thomas, who helped to create the new demand for English coal, after 1900, by teaching distant peoples that it could be brought to them. Before 1900 the trade in the Welsh steam coal was badly managed and stagnant. Thomas saw that this was partly due to the heavy cost of shipping, and the lack of depôts abroad. In 1907 he and his friends set up a shipping firm. Their steamers went out laden with coal, and came back laden with timber for the propping up

of mine galleries. They worked round the coasts of Spain and France, and even to the ports of Morocco. Depôts were made, and soon, customers gathered together. Fresh life came into the coal trade.

Another great cause of trade development after 1900 was that many new commodities were beginning to be brought by sea. These new goods were needed for new manufactures and methods; for instance, rubber and petroleum were wanted as motoring developed. Others of the new commodities were foodstuffs, brought to Europe in response to the growing demands of big populations, by means of the new preserving processes. Such were the fruits, once rare, but gradually becoming usual, such as preserved apricots, pine-apples, and fresh oranges, grapes, and bananas.

In quite another way, our trade position remained a very important one. Our ships were the carriers for the world's trade, and to our ports, especially to London, they brought some goods which could hardly be bought anywhere else. This importing for re-sale is called "emporium trade." Tea, spices, sugar, cotton, and coffee all come to London to be resold to the Continent. Some goods, mahogany, ivory, and furs, can practically only be bought in large quantities in London. Our ships bring ivory from Africa and Abyssinia to the London docks, where it is stored in a great warehouse, on "the ivory floor." To the quarterly sale come buyers from France, Germany, America, and even India. They inspect the tusks and horns of all sorts and qualities, laid out upon the ivory floor, and then go to the city to attend the sale in Mincing Lane. "The ivory sales of the world are held in London." When the ivory has been sold, it is re-packed, and, if its destination is abroad, away it goes from the London docks, on its second journey in an English ship.*

* Before 1914 a second ivory market was arising at Antwerp. It was due to the opening up of the Congo by Belgium.

The position of our export trade before the War is shown by the following table :

Exports.		Imports.	
1912.	£	1912	£
Cotton goods ..	120 $\frac{4}{5}$ million.	Foodstuffs ..	280 $\frac{1}{2}$ million.
Manufactured iron and steel ..	72 ..	Raw materials ..	275 $\frac{3}{5}$..
Coal ..	42 $\frac{1}{2}$..	Manufactured goods ..	185 $\frac{3}{5}$..
Woollen goods ..	38 ..		
Machinery ..	33 ..		
Chemicals ..	21 ..		
Ready-made clothes	15 $\frac{7}{10}$..		
Linens ..	10 ..		
Leather and earthenware ..	10 ..		
Shipbuilding ..	7 ..		
Wool ..	4 $\frac{1}{5}$..		
Oilseeds ..	4 $\frac{1}{2}$..		
Electrical goods ..	4 ..		
<i>Total value of Exports</i> £598 $\frac{9}{10}$ million.		Imports £744 $\frac{3}{5}$ million.	

This table shows how our foreign trade had changed. Instead of selling manufactured goods to a world that was mainly agricultural, we now supplied the manufacturers of the world with machinery, steel and iron goods, chemicals, and coal, and we sold to working-class populations cottons and woollens, ready-made clothes and boots. We were no longer the world's one manufacturer, but we made and sold more by far than we had done in 1875. The trade of the world doubled between 1890 and 1913, and with it our own trade grew immensely.

The extension of world trade linked nations together. The truth of this was shown by the War. It shut off nation from nation, and the trade of the world broke down. We in England, between 1914 and 1918, were living almost without normal foreign trade. Food cards, meat shortage,

and potato queues were the signs of it. The defeat of Germany, too, was really the defeat of a country cut off from its trade, and so from its necessities.

Since the War ceased, it has been towards the reconstitution of international trade that the world has been struggling. Some nations temporarily dropped out. Chief of these were Russia, Austria, and Germany. We ourselves have had armies of unemployed, because our great trades depend on orders from other countries. For we are makers of special goods vastly in excess of our own needs, to exchange for others which we cannot provide. It is because, even in 1925, there is not yet real peace in the world, that we can see the signs of suffering in all our manufacturing districts.

Yet wherever there is any return to peaceful conditions and peaceful work, foreign trade begins to revive.

BOOK LIST

Author.	Book.	Publisher.
Bone, D.	The Brassbounder	<i>Duckworth.</i>
Gibbons, H. de B.	Economic and Industrial Progress of the 19th century	<i>Chambers.</i>
Hayes, Sir B.	Hull Down	<i>Cassell & Co.</i>
Hooper, F.	These Eventful Years	<i>Encyclopædia Britannica Co.</i>
Hurd, A.	(1) The Sea Traders (2) The Triumph of the Tramp-Ship	<i>Cassell & Co.</i> "
Knowles, L. C. A.	The Industrial and Commercial Revolutions in England during the 19th Century	<i>Routledge.</i>
Reisenberg, F.	Under Sail	<i>Cape.</i>
Traill, H. B.	Social England (vol. vi.)	<i>Cassell & Co.</i>
Whitaker, J.	Almanac	—
Conrad, J.	Typhoon	—

CHAPTER VIII

TOWN LIFE

SINCE the development of the Industrial Revolution, English towns have fallen into three classes. In the first place, there are still the little old towns that have hardly been touched by the factory system. They are ancient boroughs and market towns. Most of them are the centres of the agricultural life of the surrounding district. Even to-day, such towns have often still their cobbled pavements, their narrow alleys, their dignified Georgian houses where gentlefolks lived, and the bow-fronted windows of little old shops. Farmers still drive in to the weekly market, and it is the gig, and not the car, that crowds the inn yards. Such towns were pictured, as they were soon after 1830, by Dickens in "David Copperfield," then by George Eliot in "Felix Holt," and in later years by Anthony Trollope in "The Warden," and by Thomas Hardy in his "Wessex Tales." They have kept continuously a character and life of their own.

In the second place, there were, in 1830, many old cities and towns which were being rapidly transformed by the industrial changes. Into Leeds, between 1831 and 1841, poured 29,000 people. Nottingham grew from about 29,000 in 1801 to over 50,000 in 1831. Such towns were London and Leeds, Manchester and Birmingham,* Bradford and Nottingham.

* Manchester and Birmingham were not made chartered boroughs until 1838. But in other respects they were, of course, towns in all ways.

In the third place, there were just growing up the new town districts, which George Eliot saw rising in the industrial Midlands, just as others saw them in Lancashire and Yorkshire. These were created from mere villages, by the growth of important industries, by the discovery of coal or ironstone, or by the coming of the railway, to transform an unknown hamlet into a great holiday centre.

By 1830, in these two last classes of towns, social life had accumulated many difficulties, for even the great towns, ruling themselves as boroughs from of old, had far outgrown the old means of good order and governance. The beginning of change was made in 1835, but for forty years after people were only learning how much needed to be done ; indeed, it was not until 1875 that the greatest deficiency in the local government of the towns was in any effective way overcome.

In 1830 these deficiencies were as serious as they well could be. Change had become absolutely necessary. For the old town constitutions could not be altered so as to make them suitable for the tasks now to be faced. Local government in the towns was still carried on in the ways which had persisted from mediæval times. These ways varied in each borough ; * but certain arrangements were found in 1830 in a great many boroughs, and so there were certain general, widespread causes for great discontent.

In the first place, in 1830 only a very few of the people living in a borough had any share in town government. These privileged people were the burgesses or freemen ; they had acquired the right because they were sons of burgesses, or their apprentices, or else because they had bought " the freedom of the town." Hardly anywhere were half the townspeople burgesses. At Ipswich, in 1833, the freemen were only about one in ten of the householders. At Leeds,

* *Each town should be studied by itself, to see how local interests and circumstances had built up the local government.*

with its 130,000 inhabitants, very few became burgesses. Long ago, the burgesses had elected their mayor and aldermen, and had helped to decide the town business in the town court.* But even in Elizabethan times, this plan had broken down in many towns,† because burgesses simply would not come to the courts and elections. By 1830, and for long before, in a great many boroughs there were no elections, and mayor and aldermen and council filled up gaps in their ranks by themselves choosing a new councillor. Often they were only too glad to get any fairly suitable man to undertake the burden of service. These non-elective town governments were called "Close Corporations." Some, like that of Liverpool, were excellent, in 1830; others, such as Leicester, were self-seeking and corrupt. At Leeds, the close corporation was in the main honest and serviceable, but its members took no action that they need not take, because they felt out of touch with the population of the thirty-two square miles of town territory.

Secondly, the governing bodies of boroughs could not deal with actual needs. Old town limits were being overflowed, and people were beginning to live far outside the bounds. At Nottingham, the borough was hemmed in on the north and south by common lands which could not be built on. To east and west, the old bounds were but a very little way from the centre of the town, and as it was only in these directions that building could be done, the town population overflowed on to the estates of Earl Manvers and of the Duke of Newcastle. Both were outside the borough, and no orders of the town authorities held good there. In many towns it came about in the same way that quite a large number of the houses were not included within the town bounds at all.

In the growing towns of 1830, much money needed to be

* See Book III., Chap. III.

† See Book IV., Chap. V.

spent on lighting and paving, on drainage, on water supply, and other things. Yet, except for the upkeep of a small police force and a prison, many corporations never levied a rate. The reason was, that the corporation had the old town property * in its charge. The very existence of these possessions made people feel that expenses ought to be paid out of the income from them, and that a rate ought to be an exceptional thing.

Lastly, from the middle of the 18th century the interests of townsmen had turned away from the smaller affairs of their own streets to the greater affairs of the nation. As the towns grew, new difficulties of cleanliness and health arose, but men were not thinking about them, and did not perceive or attend to them, for there was no compulsion to do so. All that was absolutely forced upon town authorities was the necessity of keeping order and preserving the King's peace. Hence, by 1830 the mayor and his brethren, it is true, still sat regularly in their court of justice, and punished offences and kept up a prison, and often even a paid police force; but although they had power to make bye-laws on



FIG. 24.—London Policeman in 1839.

From Cruikshank's Illustrations to "Sketches by Boz."

* This usually consisted of houses and property in the town, rents of stalls in the market, tolls and dues of markets and fairs, fines taken in the town court, and common pastures and meadows. The town estate at Leicester was worth about £4000 a year in 1834; Liverpool had an income of £100,000, arising largely from its harbour and market, as well as its lands. Many towns had but little income.

any matter affecting the town, they no longer made great use of this power.

For all these reasons, the old boroughs were not coping with the new conditions. Mainly because of their unfair interference in Parliamentary elections, public opinion rose against them about 1830, when the Reform Bill was agitating all the voters. In 1835, the Municipal Corporations Act altered the whole system, as far as it applied to 183 of the greater towns. In each of these places there was to be a town council, composed of mayor, aldermen, and councillors, chosen by the rate-paying householders. This gave greater public control.

The Act gave the town council all the powers of the old corporation, and ordered it to light the streets, and provide a police force. The council might levy a rate, and make bye-laws. But the councils often held back, just because the householders were mostly middle-class people, not very willing to pay high rates. Also, the council was not ordered compulsorily to attend to town drainage, or similar matters, nor to see that its bye-laws were obeyed. Unfortunately, too, borough boundaries were left as they were. Thus the change was not always very great. For instance, in 1844, Nottingham was a town of over 53,000 people, packed on the ground where some 29,000 had dwelt in 1801. On one piece of ground, 220 yards square, lived 4200 people. The lack of drains is shown by the table on p. 182. Yet the town council was not itself compelled to make sewers, nor to compel other men to make house drains. Most working-class houses simply had middens, that is, refuse heaps. Once a year, at a special meeting, the town council fined people for "nuisances," such as letting gutters overflow, or keeping pigs in their backyards. But the fines were not collected, because people thought them unfair. Until 1845 the council laid down no rules about new buildings. Men went on making

“back-to-back” houses (see Map IV.). No legal power existed to compel a landlord to make his property sanitary. He could only be persuaded, and there was no one whose duty it was to do so.

One great source of weakness in the town councils was the fact that they had not got in their hands all the work of governing their town. Before 1835, because the corporation was not doing the work, people had often obtained special Acts of Parliament, appointing special commissioners to undertake certain duties. In London, in 1840, the “Westminster Commission” consisted of thirty gentlemen, looking after about 140 miles of sewer, between Hampstead and the Thames, Temple Bar and Fulham. They levied a rate on all householders. But they had no power to make new sewers,* nor to compel landlords to connect their houses with the sewers. In the Strand, silversmiths’ wares were frequently discoloured by sulphuretted hydrogen exhaled from the sewers.

At Nottingham, and in many other towns too, there was a special “Highways Board,” which looked after main streets, but had no power over the by-ways and courts and alleys where the filth was worst. The Act of 1835 allowed these special bodies to go on with their work, unless they voluntarily gave it up to the new town council, and a few did so. In 1835 these bodies were spending about £142,000 a year, as against about £38,000 spent on improvements by the old corporations. The table below shows how, in 1844, the work was divided up.

BIRMINGHAM		
Drainage.	Cleaning of Streets.	Water supply.
The greater part well drained under a local Act.	There are regular scavengers, but the courts and alleys are not within control, and are very filthy. No local authority has sufficient powers.	By a company. (There is) no free supply.

* They pretended that each new sewer was a branch of an old one.

NOTTINGHAM

Drainage.

The principal parts of the town are naturally drained. Inferior parts neither drained nor paved. Sewers are very defective and unsystematic. There are no local regulations.

Clearing of Streets.

No service of scavengers. The poorest parts of the town are entirely neglected. Refuse of courts allowed to accumulate. No local authority has adequate powers.

Water supply.

Well supplied by two water companies.

CHESTER

Badly drained. Powers seldom enforced for want of funds. House drains are only efficiently cleansed by heavy rains. Local regulations are not enforced.

Streets are cleansed at irregular intervals by paupers, but courts and alleys never.

Water supplied by a company, and from springs. No supply for the poor; obtained by begging and from the river.

YORK

Drainage managed by 40 Commissioners under a local Act. But house drains managed by each individual.

Scavenging is done by contract. But courts and alleys are not considered within jurisdiction of the Commissioners. Cleansed by the inhabitants.

None.

It was not the deficiencies of local government alone that were to blame. It was partly also the general ignorance of medical and sanitary science. In 1844 doctors were still working hard to prove that "fever districts" were just the districts that had no drainage.* The ordinary man and woman had no knowledge of these things. The chairman of the Westminster Commissioners argued in 1844 that it was better not to flush the sewers with regular supplies of water, but to leave the work to storm water. Some of the drains in charge of his Commission were actually so flat-bottomed, and so deficient in fall, that sewage collected and accumulated in them. Indeed, it was not very easy to get good sanitary appliances, for in those days engineers were only just beginning to think about them at all.

* Pasteur's discoveries of germ life, on which modern theories of disinfection and prevention depend, began in 1854.

All these causes combined to make English towns in the 'forties very unhealthy for all classes, and miserable places indeed for the poor. In London, in the good residential quarters, such as Bayswater and Brompton, the houses were of the sort quite familiar to us to-day, three or four stories high, often with railed areas in front, planned with large dining-rooms, a study for the master, not yet called a smoking-room, and, on the first floor, a large drawing-room and back drawing-room. Heavily and solidly furnished, these rooms are sketched by Thackeray and by Dickens, in "The New-comers" and in "Dombey and Son." But in some ways, the houses and their arrangements were very different from those of to-day. Most, it is true, had water laid on in the basement at least, for water companies were quite numerous both in London and in other towns. But hardly any had bathrooms, and not very many had water-closets, although these were beginning to come in. A great many London houses of a good class had no connected drainage; servants, who commonly slept in the basement, sometimes suffered from fevers due to the escape of foul gas from cess-pools beneath the houses. Thus, although the London life of the well-to-do was very pleasant, it was not very healthy, and any epidemic swept through the town with fearful violence.

Bethnal Green was one of the poorest of the poor parts of London. Part of it was described thus in 1844, by Dr. Southwood Smith, of the London Fever Hospital:

"The place called Punderson's Gardens is a long narrow street, in which filth of every kind is allowed to accumulate and putrefy. A mud bank on each side commonly keeps the contents of this gutter in their situation, but sometimes . . . the gutter overflows, its contents are poured into the neighbouring houses, and the street is rendered nearly impassable. . . . The street is wholly without drainage of any kind. Fever constantly breaks out in it, and extends from house to house. . . . The open area called Lamb's fields is about 700 ft. in length and 300 ft. in breadth; of this space about 300 ft. are constantly covered in stagnant water, summer and winter. In the

part thus submerged, there is always a quantity of putrefying animal and vegetable matter, the odour of which is most offensive. An open filthy ditch encircles this place, which at the western extremity is from 8 to 10 ft. broad. Into this part of the ditch the [closets] of all the houses of North Street open, and the refuse from them is allowed to accumulate in the open ditch. Lamb's fields is the fruitful source of fever to the houses which immediately surround it, and to the small streets which branch from it."

Set in such surroundings as these, the Bethnal Green houses were as wretched as those in Drury Lane, described by Charles Dickens. Many of them were built round courts, such as we now rarely see. The court was a flagged space, often no wider than a passage, with a narrow entrance, like a tunnel or arch, through one of the houses of the main street. The court was completely surrounded by tall tenements or little low cottages, and at the end of it was often the solitary lavatory or lean-to, covering what was little more than a dunghill, never cleaned out, and oozing into the yard, or even out into the street; the latter was never swept, and the dirt was never removed. Tall old 18th-century houses and little cottages were all alike in the same state.

In 1840 these poor dwellings were already much overcrowded. There was no limit set by bye-law or otherwise to the number of people who might pack into a house. In 1844, among the working-class people of St. George's, Hanover Square, 1465 families dwelt in 2175 rooms, and many had but one bed to a family. Among the very poor, things were naturally worse. In Westminster Dr. Toynbee had as a patient an old fruit-seller, who tenanted a corner of a room.

"The landlady, who herself occupied the central part, had tenants in the three other corners, in one of which was a widow with three or four children. My patient, not being able to go out with her basket, was unable to pay her daily rent, and therefore on the suggestion of her landlady underlet half her bed."

In such houses, cleanliness was quite impossible because

there was no water supply. Sometimes the people depended entirely on pumps. In 1844 Dr. Smith said :

“ In Bethnal Green there are whole streets in which there is not a single house with water laid on. . . . For all the houses in Cranbrook Street, Old Ford Road, Charlotte Street, Grosvenor Place, and Twigg Folly, there are but two pumps.”

Everywhere, many depended upon rain-water butts, old decayed wooden tubs, full of dirt and insects. In Southwark



FIG. 25.—An Inhabited Cellar in St. Giles-in-the-Fields, London, about 1863.

From the Collections contained in R. Dobie's "History of St. Giles'."

In part of St. Giles' parish, round Monmouth Street, celebrated for its old clothes market, there were many such dwellings. In 1859, the magistrates began to prohibit the use of any such as were brought to their notice. This one was sketched on the spot, about 1863.

about 18,000 people were supplied by water companies, and about 30,000 people had no regular supply at all. Where water companies supplied poor houses, they usually did so by a standpipe in the court, or in the bottom floor, where the tap ran only at certain hours. In London the supply was often given three times a week, and the people waited

for it in queues, with pails and jugs in hand. They used the precious water over and over again, and let it stand about dirty, for they had no sinks or drains down which to throw it. Dr. Toynbee said in 1844, that sometimes he could not even get a sick child washed, and often he had to wait a long time, and sometimes to leave without washing his hands at all, when the hue and cry for water up and down the street was unsuccessful.

There was but little change in Bethnal Green between 1844 and 1872. In that year a school attendance officer spoke of the houses thus :

“ Fifty-three, Old Nichol Street, might be given as one type of these houses. There were ten rooms, four of which were taken in from a public-house next door. Into these, ninety persons have been crowded at one time. The stairways were very dark, the doors broken, the panels often cracked and locks useless, the doors being kept closed by pieces of dirty rag. . . . The offices in the small yards were frequently out of repair, and kept in an indescribably filthy condition. . . . The courts in the locality were even worse than the streets. . . . I have seen men examining burglar's tools on window sills, and practising robbery from upper windows. The death rate was four times higher than in any other part of London.”

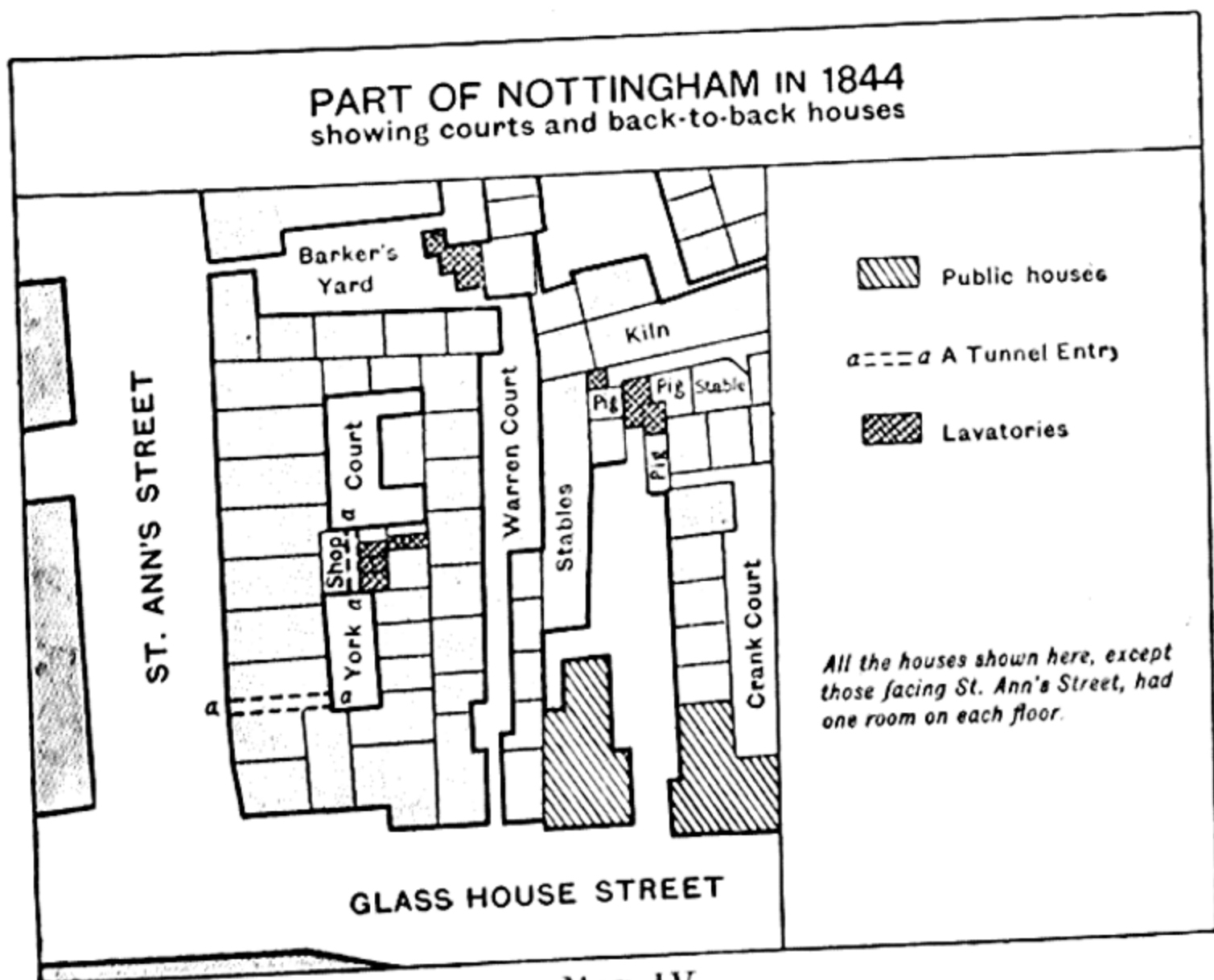
Very similar to Bethnal Green were large parts of the industrial towns of the North and of the Midlands. In Liverpool, in 1840, there were about 40,000 people living in cellars, and 60,000 in courts. In Manchester, in 1823, Dr. Kaye * described the new slums, with unpaved, filthy alleys, undrained houses, overcrowded cellars, foul courts, foul air, and foul mud.† From Preston, from Birmingham, and from Nottingham, came similar evidence. In the years of poverty and distress, between 1830 and 1850, and also in the prosperous years 1850 to 1875, little was done. It was only in a few towns that the slums were attacked. In Liverpool, the

* See Chap. IX.

† Cf. Mrs. Gaskell's description, dating from the same time, in “*Mary Barton*.”

town council began to buy up the back-to-back houses in 1864; in Manchester, nothing was done for another twenty years. In general, little was done, because people were not really convinced that much needed doing.

Yet, from 1830 onwards, two groups of men were labouring to drive home the need for action. The first were philanthropists like Lord Shaftesbury. The second group consisted



of men of science, like Dr. Southwood Smith,* and officials, like Mr. Edwin Chadwick, a Poor Law Commissioner. It was these men who gathered together the evidence as to the actual state of the people, much of which was published in official reports—the Fourth Report of the Poor Law Commission (1839), the Report of the Poor Law Board (1842), and the Report of the Health of Towns Commission (1844).

* See p. 183.

Moreover, cholera came to England in 1831, in 1848-49, in 1853-54, and in 1866, and created great fear. In 1848 Parliament passed the Public Health Act, which allowed places to set up local "Health Boards," under the control of a Central Board of Health.



FIG. 26.—A Parish Beadle in 1839.

From Cruikshank's Illustrations to "Sketches by Boz."

Of the latter Lord Shaftesbury, then Lord Ashley, was the first chairman, and Chadwick and Southwood Smith were members. Scarcely was the Board at work when cholera again broke out in London, and in a few weeks of hot summer weather swept away 4000 souls. The members of the Board, and even their subordinate officials, remained in London, working early and late, whether well or ill. The Board had a very uphill task, and it became most unpopular; at last, in 1854, it was dissolved. In 1838 Chadwick had spoken of town authorities as sitting still in

the midst of pollution with the resignation of Turkish fatalists; and these bitter words were still true of many towns, a whole generation later.

II. 1875-1925

The real work of improvement began about 1875. The cause of this change was partly that many people had now begun to take great interest in the hard lives of the poor. Dickens had not written, or Lord Shaftesbury and Chadwick worked, in vain; Charles Kingsley's fiery novels, "Two Years

Ago" and "Alton Locke," drove home again the dreadful need for sanitary reform; and the work of Miss Octavia Hill,* after 1865, in managing slum houses, and her accounts of it, full of life and detail, actually interested people almost "like a book."

Moreover, by the decade between 1860 and 1870, the ordinary educated man understood more of the danger of bad drains and bad water than his father had done. Medical knowledge was growing; Pasteur was revealing the existence of bacteria, and Darwin was showing how conditions of life affected life. Parliament itself was more interested in public health than it had been. The working-class townsmen won votes in 1867, and this question concerned them more than any one else. Moreover, in 1874, Mr. Disraeli had come into power, and for some years before he had been teaching Conservatives that care for the needs of the people was especially the duty of their party.

The result of all these causes was the passing of the Public Health Act, in 1875. This Act divided the whole of England into "Sanitary Districts," urban and rural.† In the urban districts, local boards were to be elected, to look after public health. Thus the old special bodies disappeared, and new ones took their place. The "Local Board" in a town was generally the town council.

These local boards were given certain powers to deal with health matters, and were also charged with certain compulsory duties. The local board was given charge of all streets and highways, and was ordered to see that they were paved. The board must make enough sewers for the town, and see that all houses were drained into sewers. Henceforward no house in a town might be built without proper sanitation and

* She was the granddaughter of Dr. Southwood Smith. John Ruskin, her personal friend, gave the money to start her work.

† This had been done already by an Act of 1872.

water supply, nor might any newly built cellar be let as a dwelling. The town council could compel a landlord to provide drainage and water, and have him punished by the magistrates if he did not do so. Lastly, the Act compelled the town council to send inspectors into any and every house if needful, to find out unhealthy arrangements, and these "nuisances" were to be punished by the magistrates in Court. Beside these inspectors, every town must appoint a town doctor, the "Medical Officer of Health." Many other things councils might do, if they wished, such as the buying of land for parks, or the provision of gas and water; but as to the first-mentioned duties, no choice was left to the towns any longer.* They were to be supervised by a new Government department, the Local Government Board, set up in 1871.

Now the town authorities began their new work. The first need was to make a staff of health officers. For instance, in Nottingham a doctor was made the Medical Officer, and a Chief Inspector of Nuisances was appointed with four men under him, to take charge of the four quarters of the town. There were also inspectors of meat, fish, and fruit, and later, when the town built a disinfecting station for infected clothes and furnishings, they appointed a manager of it. All these gathered at the Town Hall every morning to give people a chance to bring them complaints, but on most mornings no one came, and then the inspectors scattered on their rounds. These meant real hard work, for the town was still in an evil condition. In the central part the houses still had their middens. Even after ten years' work, in 1882, there were still 3000 left. The inspectors had to see and persuade land-

* Two other important Acts strengthened the powers of the borough council. In 1868 the Powers Act gave power to close houses which the landlord persistently failed to render fit. In 1875 the Cross Act gave them power to buy any unhealthy piece of property, even if the owner did not wish to sell it.

lords, convert and train tenants; they must order repairs to be done, cleaning operations to be carried out, and see that an annual limewash was given. With the help of Dr. Seaton, the Medical Officer, they persuaded people to use dustbins instead of dumping rubbish on the midden. But the work went on slowly. Even the total number of unhealthy houses dealt with was not very great. In 1882, 81 were cleansed and 40 supplied with water, whereas in



FIG. 27.—A Lady of 1854.
From J. Leach, "Pictures of Life and Character."



FIG. 28.—Gentlemen of 1854.
From J. Leach, "Pictures of Life and Character."

fifteen months just at this time nearly 3000 new little artizan houses had been built.

Dr. Seaton and his assistants had to accept compromises. Since 1873 there had been a town bye-law that every new house must have either a water system of drainage, or a tub system, attended to by the town service of refuse removal. Dr. Seaton was obliged to carry on the tub system, because it was after all an improvement on middens, but even in 1882 over 23,000 houses were only visited by the scavenger once a week. Still, by 1882 parts of the town were drained into proper sewers, and the little River Leen, which had been

an open sewage channel in 1844, had been purified by the making of a main sewer. In the Narrow Marsh, where people were still packed together, 300 to the acre, the corporation had purchased one bad plot. They had built the Victoria Dwellings, a large, high block of model tenements. But low as were the rents, the dwellings hardly paid; and many of the old dwellers on the site would not go into them, but moved off to overcrowd the worst parts of the town still further. There was not room for them all in the dwellings, and some people would not live up to the regulations enforced there. Indeed, Dr. Seaton's work was not cheering. It was all done in the slums and alleys, and to use the full legal powers of the town was not possible in the state of public indifference. In 1882 he wrote:

"Few people have any idea of the time, trouble, and patience required for the removal of nuisances which involve any considerable expense to the landlords. . . . In such a case, the Sanitary Authority can serve a notice requiring [the landlord] to do this; . . . if he fails, he can be summoned before the Magistrates, who can fine him £5, and make an order [for him to do it], and fine him for every day's default. It will be seen then that the law is amply sufficient, but although nuisances exist by hundreds in the slums of our big towns, one hardly ever reads or hears of its being enforced to its full extent. Hitherto public sympathy has been rather with the rich than with the poor, but, as a matter of policy, Sanitary Authorities have had to rely mainly on persuasive methods."

Yet the new health service in Nottingham brought down the death rate in the town from 26 in a thousand people to 22.

For many years medical officers and town clerks and social workers laboured for still further improvements, but people in general cared very little about them. This was because most rate-payers lived in districts that were not slums, and as for the undertaking of big changes, they were very costly.* Successive Housing Acts were passed, the

* When the London County Council cleared out and rebuilt the Bethnal Green streets, described on pp. 183, sqq., the change cost £266,000.

most important in 1890 and in 1909. The Act of 1890 gave town authorities power to compel owners of bad property to sell it to them, even against the owner's will, on payment of high compensation. It also allowed them to borrow money and build houses. But no town was forced to do either of these things, unless the council wished it. They were, however obliged to cause their medical officer to find out all houses that were unfit for use, and they were compelled to see that such houses were improved, or else to close them. In 1909 this order was repeated, and, moreover, no landlord of working-class houses was allowed to let an insanitary house, and every landlord was ordered to keep his houses sanitary as long as they were occupied.

Under these Acts, London, Liverpool, Birmingham, Manchester, and other cities cleared out some very bad areas at vast expense, and many small improvements were made in unhealthy houses, while others were closed. But by 1909 things were getting worse rather than better. Private building, which had paid so well, grew less profitable as land near great towns grew dearer. Therefore the number of houses built yearly was falling far behind the number needed. Population was growing, and people were still coming from the country into the towns. In 1851 half the population was living in towns, in 1901 three-quarters, and in 1921 nearly four-fifths of the whole nation was town-dwelling. Many poor people were still living in houses dating from the 18th century, or early 19th century; buildings such as the back-to-back houses were still common. Landlords were still allowed to let houses that were really insanitary, because it was often impossible for the poor to find any others.

By 1910 the great English towns were altering a good deal in appearance. In the business quarters, office buildings were growing taller and taller; iron and steel began to be used in building, and lifts were used from floor to floor.

Electric light blazed in shops and offices, and in the streets the tall electric standards poured down their light on traffic that was growing denser and faster. In the residential quarters of London, since the end of the 'eighties, tall blocks of flats had arisen, mostly rather expensive, and in the suburbs, new terraces of houses were covering up green fields. The County of London was filling its remoter parts with houses; Hammersmith and Hampstead had their tubes, and Hackney and Dalston had their electric trams. Beyond the limits of the County of London, villages and little towns were now reached not only by trains but by trams and buses; new streets and groups of houses were arising, and crowds of men and women poured at night out of London, and back again next day, to and from the suburbs.

In the great towns life had grown much more lively than it had been. It is true that country lads and lasses had always heard ballads of London life, and of its streets paved with gold; but actually, in the 'thirties and 'forties of the 19th century, town life for the poor was drearily dull. Before the Saturday half-holiday became general, and before the institution of the four Bank Holidays in 1871, the workman's only day off was Sunday, and in the 'forties, and long after, every place of amusement was shut on Sunday, and there was nothing to do. Middle-class townsfolk had much social life among their friends, giving and attending formal dinner parties, and exchanging calls. But even for them there was not nearly so much theatre-going and gadding about as there is now. This was partly because people who did not keep a carriage found it expensive to get about, and partly because, in the reign of Queen Victoria, family life was strict and simple.

But by 1914, by gradual steps, there had been a great increase in cheap amusements, as well as in expensive ones, and, moreover, in most towns it was really quite easy to

reach the theatre or the music-hall, or the games ground where two celebrated teams were to play. Cinemas were just beginning to open.

All these changes arose from the great development of transport. In London, until about 1880, the horse bus had been the principal means of getting about. The first buses had run in 1829, and proved so useful that even in a few years they connected even such distant villages as Hammersmith with the City. In the 'eighties, the buses were drawn by two horses, usually good strong ones. The driver and conductor wore ordinary clothes, and in wet weather the driver covered himself with a great heavy tarpaulin cape. The buses had seats outside, arranged back to back along the middle. In 1896 Charles Booth wrote :

"A generation will soon arise, to whom it will appear inconceivable that no longer ago than 1883, the sexes usually separated at the door, the woman to enter a somewhat dark and very stuffy interior, while the man, if agile enough, seized a strap, and climbed a perpendicular ascent, with a bare foothold of iron ladder or projecting steps for the knife-board above, or, mounting the wheel, swung himself up beside the driver. If wet weather had driven men inside, an appeal was made, and, 'to oblige a lady,' some man would change his place within for an outside."

It was not until after 1891 that the outside staircase and the "garden-seat top" became general on the London buses. The London bus and busman were very popular and efficient :



FIG. 29.—The Last Cab and First Omnibus.

From Cruikshank's illustrations to "Sketches by Boz."

Omnibuses began to run in London in 1829. The Cabriolet shown here was introduced into London from Paris about 1820. It became very popular and superseded the Sedan chair to a great extent. In 1834 the Hansom Cab came in, and this, in turn, superseded the Cabriolet.

nearly 4000 horse buses were running in London in 1902.

From about 1884, too, the suburban railway services were much improved, so much so, that an observer wrote in 1887, "Suburban railways have taken the place of suburban omnibuses." Not only did the City man use these trains, but from 1884 the London railways were compelled, by an Act of Parliament, to provide cheap services for workmen, and so poorer folk began to use the trains habitually. The first tube railway was opened in 1890 from the City to Stockwell.*

Moreover, tramways gave the working-class another cheap means of moving about. The earliest horse trams began to ply in 1869, and have only recently disappeared from some provincial towns such as Oxford. Outside London, in many large towns and industrial districts, steam trams were very widely used in the 'eighties and 'nineties; but it was not until electricity was used for them, in 1896, that trams began to spread all round London. In the provinces, they were even more important. Indeed, it was only the coming of the motor bus, about 1911, that checked the advance of the tramways.†

A second change, dating from 1888, was that the great towns became more completely self-governing than before. The Local Government Act of 1888 created councils to carry on the business of counties, such as making of rates, care of main roads and bridges, management of Parliamentary elections, and other things. Boroughs already had some of these powers, but not all; now the greater boroughs were given county rank, and their councils were made sole authority for all these purposes, just as the county councils

* The first underground railway in London was the line between Paddington and Farringdon Street, opened in 1863.

† In 1925 the London General Omnibus Company owned 4150 omnibuses, and they covered 420,000 miles daily.

were in the shires.* In 1888 there were only 61 county boroughs. Now there are 82, in addition to the 28 metropolitan boroughs surrounding the City of London. Their powers have been added to, especially in 1902, when they became the Education Authorities for their districts.† In fact, the Act of 1888 marked the end of the old system of appointing a special body for each distinct purpose, and the beginning of a new unity in town government. This unity has fostered the sense of local life, and the vigour of local patriotism.

Long ago, people began to feel that town authorities needed to control the districts surrounding their towns. Even in 1882 Dr. Seaton had complained that Nottingham had nothing to do with the planning and building going on in the outskirts. One piece of floodland was then being built over, and he thought it quite unsuitable for houses. Of another estate he wrote :

“ A little town is springing up here in which the system of cesspool drainage, which it was hoped had become obsolete, has been reverted to ! Thus at a time when a good deal of public money is being expended on the general sanitary improvement of the Borough, we are seemingly powerless to prevent the creation of what promises to be in the future an unhealthy area ! ”

The size of our towns and their constant increase compelled people to think of giving this sort of control. In our small country we have fifty towns of above 90,000 people, and they are continually growing. It is because of this that men have accepted the idea of “ Town Planning.” This means that when a new district seems likely to be built over, plans should be made beforehand, and rules enforced. The ground is surveyed, and the architects in charge decide where the future roads shall go, where there shall be houses,

* The boroughs so ranked were those which had been made counties in the past, as had occasionally been done, or those with a population above 50,000.

† See Chap. IX.

where factories, where shops and markets. They choose places for parks and playing-fields, and see that the houses are not crowded together. Lord Leverhulme caused Port Sunlight to be planned out beforehand in this way, in 1888, and Mr. Cadbury did so too at Bournville from 1895; but the two places which became best known were the Letchworth Garden City, founded in 1903, and the Hampstead Garden Suburb, which was laid out in 1907. A few towns, at great expense, had obtained special Acts of Parliament which allowed them to plan suburbs in the same way; but it was so costly that only a great prosperous place like Liverpool could do it. All this work made a great impression; and in the Housing Act, 1909, leave was given to the town council of any large town to prepare town planning schemes for areas likely to be built on, and to enforce them, even against the will of the local property owners, on payment of compensation. Yet, although many people would have liked to see this done, very few councils indeed undertook the work because of the expense.

The War, however, brought the towns into a critical condition. During the War, very few new houses were built, and schemes for improvement were stopped. For the first time, not only the poorer classes, but the prosperous artizan, and the middle class and professional worker, found it really hard to get house-room. Indeed, the whole mode of life among middle-class people altered; many ceased to occupy separate houses at all, and others took small ones. As the service men were demobilized, the overcrowding became worse than ever. Thus, the question of housing came home to people of all sorts. In 1919 an Act was passed which showed the effects of this. Town councils and county authorities alike were ordered to find out exactly how many working-class houses were needed, and to make plans to supply them. These plans had to be examined by

the Ministry of Health, and were then to be executed. The greater part of the cost was to be borne, not by the town, but by the national exchequer. Moreover, every large town was now ordered to make town-planning schemes for the suburbs which were likely to be built on. This Act amounted to a complete change of plan. Had it been a permanent Act it would have put the burden of building on to the towns ; for the short period of its existence it compelled them to undertake it. It removed the old difficulty of expense, by promising that most of the money should be found by the nation.

Many towns gained a considerable number of houses through the working of this Act. Yet it has not done as much good as was hoped, because the money and the powers which it gave have been much decreased by later Acts, and at the same time, medical officers of health and town clerks have not been able to close unfit houses, and hurry on plans for rebuilding bad parts. It is estimated that the national shortage of houses was, in 1925, even greater than it was at the time of the Armistice in 1918, because year by year we drop behind the needs of the year. Everywhere there are insanitary, overcrowded homes, as bad as those described on p. 182 ; and new districts are beginning to degenerate into overcrowded areas.

Against this must be set the greater interest taken in health work in towns, the health visiting carried out by women health visitors and sanitary inspectors, and the efforts to secure clean food, and to preserve open spaces. It may be that we stand in this way, too, at the beginning of a new time.

BOOK LIST

See also list for Chaps. V., VI., and XI.

Author.	Book.	Publisher.
Clarke, J. J. ..	The Housing Problem ..	<i>Pitman.</i>
Dickens, C. ..	(1) Sketches by Boz	—
	(2) The Pickwick Papers	—
	(3) David Copperfield	—
	(4) The Old Curiosity Shop	—
Kaye-Shuttleworth, Sir J.	Four Periods of Public Education	<i>Longmans.</i>
Kingsley C. ..	(1) Alton Locke	—
	(2) Two Years Ago	—
Lambourne, E., and Hughes, T. E.	Towns and Town Planning ..	<i>Clarendon Press.</i>
Maurice, C. E. ..	Life of Octavia Hill ..	<i>Macmillan.</i>
Rowntree, B. S. ...	Poverty	<i>Nelson.</i>
Slater, G. ..	The Making of Modern England	<i>Constable.</i>
Webb, S. and B.	English Local Government (The Manor and the Borough)	<i>Longmans.</i>
Parliamentary Papers	Report of the Royal Commission on the State of Large Towns, 1844	<i>H.M. Stationery Office.</i>

The Victoria County Histories (*Constable*) have articles upon the History of particular towns.

CHAPTER IX

THE STATE AND THE SCHOOLS

IN this chapter we have to trace one of the profoundest of all the changes that have passed over England since 1830. At that time many people still thought that education, though needful for boys of the upper and middle classes, was of doubtful value for most women and dangerous for all ordinary folk. Those who wished for it for working men and women, thought of it as a branch of religious work. The State had no concern with it. At the present day, schooling has become obligatory for all. We think of it as a sheer necessity for every boy and girl ; to neglect it entirely would be to endanger the well-being of the nation. Education therefore at the present day is in the main controlled by the Government and by Parliament.

I. ELEMENTARY SCHOOLS (1830-1870)

In the year 1830 there were relatively few schools even for boys of the middle class. In most ancient towns, and in many little country places which had once been important, there was a Grammar School, where the boys learned Latin and sometimes Greek. Some such schools had been attached to Chantries before the Reformation, and had been refounded by Edward VI ; others owed their origin to Queen Elizabeth, or to private men and women. By 1830 some few, like the Manchester Grammar School, were large. Others merely lingered on, with sleepy masters and very few boys. In

Hertfordshire, for example, at St. Albans, in the old school founded by the monks, there were in 1835 only nine boys. At Berkhamstead School for a time there were no scholars, although the master still drew his pay from the endowment.

In the second place, there were some schools, supported by charitable bequests, that had been founded to teach elementary reading, writing, and cyphering. They were scattered in country villages and town parishes, and dated from the Middle Ages onwards. In one small Hertfordshire village, Cheshunt, a gentleman had founded a school in 1642,

“For teaching poor children to read English that they might know God the better, and also to write and cast accounts, that they might be the better enabled to be bound apprentices.”

In Barkway, a place that was still smaller, a tiny school was kept up on five or six very small old bequests, and 15s. a year from the tolls of the fair. There were few old towns that had not some such school.

In many towns, both old and new, private people started schools. In the Middle Ages, no one might teach without licence from the Bishop, but since a legal decision in 1700, this rule had been dropped, and in 1830 any sort of person might keep any sort of school. Many women kept “Dame Schools” for little children, and some of these women could actually not read. Many men and women, some educated and some almost entirely uneducated, kept “private adventure” schools for older children, charging 9d. or 1s. a week, or even more. In the best of these schools the children were carried far on in the study of literature and history and geography and Latin. In the worst, the teaching was like that of Mr. Squeers. His school was indeed a “private adventure” of the worst sort.

Schools of these kinds had existed in the 18th century. But the fearful needs created by the Industrial Revolution had caused new types to arise. From 1783, Sunday schools

had been spreading all over the country ; and in them, reading and writing were taught as an essential part of the work. In addition, the main religious bodies had been aroused by the state of the poor around them to provide weekday teaching, and Church and Chapel people were eager to teach at least the meaning of Christianity to the thousands of little children who might come to school for a year before the life of labour began. It seemed impossible to provide rooms and teachers for them, for class teaching was almost unknown, and masters rarely had a group of more than a dozen or a score to look after. But at the beginning of the 19th century, two different teachers, faced by just this difficulty of great numbers, had found a way out. In 1798 Dr. Bell, an English clergyman newly returned from India, had introduced his new system into the school of St. Botolph, Aldgate, in the city of London. He used the more intelligent children to teach the others, in very small groups, and in very simple ways under the supervision of one master. In 1801, Joseph Lancaster, a young ardent Quaker, opened a little school in the Borough Road, Southwark, and taught without pay, simply for the love of it. He could not hire help, and so he, too, employed the better children to teach as "monitors." Under his sole charge, as the school grew, literally hundreds of children were kept in order by other children. Both in Bell's school, and in Lancaster's, this sight was so wonderful and so hopeful that Church people eagerly supported the one, and Dissenters as eagerly supported the other. In 1808 a large group, mainly of Quakers, founded the "Royal Lancasterian Society," renamed in 1812 the "British and Foreign School Society." To this society people subscribed, and the money was spent in building new schools, and in helping to pay for their upkeep. In 1811 Church people founded a similar society, "The National Society for Promoting the Education of the Poor in the Principles of the Established Church." These two

societies worked very hard. By 1831, the National Society, which was far richer than the other, had over 3,000 schools, and the British and Foreign School Society had 490.*

In spite of this work of the two Societies, there were great numbers of children in 1830, and for many years after, who had no chance whatever of going to school. Between 1801 and 1831, our population had increased from nearly 9,000,000 to nearly 14,000,000. This great flood of people was mainly pent up in large towns, such as Leeds, Manchester and Birmingham, and in certain industrial country districts, such as the nail-making neighbourhood round Dudley, and the coal-fields of Durham and elsewhere. In Leeds, the population grew from 53,000 in 1801, to 123,000 in 1831, but the whole town was still one parish, served by a Parish Church and by about a dozen subordinate chapels of ease. The Vicar of Leeds was still responsible for the Church life of the whole town, but so inadequate was this life when Dr. Hook went to be Vicar there in 1837, that a friend said to him : " Had we ten new churches and ten new schools, we should not have too many." In Manchester, in 1832, charitable people had established five infant schools, for 600 little children in all, but the population was then about 224,000, and the chances for older children were quite as bad there as anywhere else. In the poorer parts of London, things were just as serious. In 1831 five parishes in Westminster had a population of nearly 43,000 ; yet in 1837 in these five parishes only 4020 children went to day schools, and of these 1035 were of middle-class parentage. In Bethnal Green, inquirers thought that 10,000 children were not being taught at all. In the thickly populated country districts there was the same lack of aid. Most nail-makers had never darkened the doors of any school whatever. In the coal-fields, villages sprang

* *The Roman Catholics, the Congregationalists and the Wesleyans, and some other communities maintained some schools for their own people.*

up round the pits ; often the old village with its parish church was some miles away, and the people in the rows of colliery cottages had to shift for themselves in religious matters. In short, in 1830 the mass of English men and women were quite illiterate, and the worst-off were ignorant of any religion. As late as 1851, Cobden said, " I don't think it safe for us . . . to be the most ignorant Protestant people on the face of the earth."

We who live in days when schools are provided by the State for all who need them, do not always realize the heroic struggles of our great grandparents in the cause of education. In the village, the Church school usually owed its existence to some energetic clergyman or parishioner. Such a layman was Mr. Yonge, father of Charlotte Yonge, who lived at Otterbourne (Hants), in a part of the old parish to which a new population had come through the making of a great high road. The building of the new school was really his work. He drew the plans, and raised funds ; his daughters worked for the school. Charlotte Yonge said : " It was built out of pen-wipers and pin-cushions," and all her life long she taught there. Another pioneer, a clergyman, was Walter Hook, who went as curate to Moseley, near Birmingham, in 1826. There was no school, and he determined to have one. To accomplish this, he had to get a site, and also obtain subscribers. He preached sermons to convince the rich, talked over his neighbours, both Church and Chapel goers, went begging from door to door for his school, ran all over Birmingham hunting up landholders, and finally persuaded the squire to let him an eighth of an acre. Then he approached the National Society, and from it obtained help towards the cost of building the little schoolhouse. Hook was enthusiastic about schools. He wrote once :

" You may depend upon it, nothing is to be done in a parish without a patient care of the schools."

A country clergyman, he thought, ought to spend two, or at least one, whole days a week in the school, and said :

“The clergyman superintending the schools and catechizing the children, the master is only required to direct the details of business, for which an inferior man will suffice.”

Many, especially of the younger clergy, were flinging themselves eagerly into this work, about 1830.

Such Church schools, sometimes with weekly fees of 1d. or 2d., sometimes free, were really used by the poor. Jesse Collings, the son of a builder in a South Devon village, wrote of the early days about 1830, when his father was only just setting up in business :

“The only education my brothers and sisters received was that given in the Church schools. The education was free, and at that time was considered good. . . .”

But when Jesse was old enough for schooling, his father was better off.

“I went to a dame school, kept by an old lady who charged 2d. a week. . . . The pupils numbered about 20, whom she taught in her kitchen, and at the same time she attended to the cooking of her modest dinner. Later on, my father being in rather better circumstances, he sent me to a school established for tradesmen’s sons. The fees were £6 a year, and the teaching consisted mainly of reading, writing, and arithmetic, which, however, were taught well.”

From 1830 onwards, many causes were at work to produce a change in the attitude of the public to education. The strong religious feeling of the time was making many men and women realize that there were countless English children who knew nothing of God ; and these people worked hard to get schools. Lord Shaftesbury mourned over the state of the country. He wrote in his Journal :

“Good Friday, 1843. With thousands and tens of thousands of people in this Christian land, this day will pass over without a notion that it is anything different from other days. Factories will run, apprentices will groan, coal-mines explode, gin shops absorb and vomit forth, the labourers in absolute ignorance, the masters in practical infidelity, of God’s saving truths !”

For two years before this, he had been doing all he could for a school for London street arabs, and the Ragged Schools grew out of that work. There were other and very different reasons too for giving some teaching to the workers. Between



FIG. 30.—The Great Queen St. Refuge for Boys, about 1860.

From R. Dobie, "History of St. Giles'."

This Refuge was set up for the destitute street children of the area round St. Giles and Drury Lane, such as Dickens had described in "Sketches by Boz."

1830 and 1840, in the years of bad trade, unemployment and agitation, many men in the upper ranks of life were really afraid of the new working class. As knowledge of their misery spread, those who were better off could hardly believe that they would not rise in revolt. In 1839, when the Chartists

were expected to rebel, Dr. Kaye, who knew the poor of Manchester well, wrote :

“ At this hour, military force alone retains in subjection great masses of the operative population, beneath whose outrages, if not thus restrained, the wealth and institutions of society would fall. The manufacturers and merchants of England must know what interest they have in the civilization of the working population.”

From 1833, factory inspectors were proving that no harm was done by keeping little children away from work, or by sending older ones to school.

Thus gradually it became more usual to speak rather in favour of education than against it. Dr. Hook said :

“ It is easy now to call meetings and urge the duty of educating the poor, because the topic is a popular one. I myself remember twenty years ago, that all we attempted to prove was that there could be no harm in educating the people.”

Hence, after 1830, there was a great outburst of energy.

Between 1835 and 1850, the religious bodies practically gained the control of popular education. In Manchester and Salford, for instance, in 1834-35, nearly 15,000 children had been taught in private schools and dame schools, and only about 5,000 in National or British schools. But by 1852, these latter had over 19,000 scholars, and only about 5,500 were still in the private and dame schools. Among the religious bodies, the Church of England bore by far the greater part of the burden, for it was much richer than the dissenting bodies. Indeed, in 1860, out of 22,647 schools belonging to various religious societies, the Church of England owned 19,549.

Until 1833, the State had had nothing to do with education. From 1833 it gave help almost as an outsider to the religious societies who really carried on the work. In that year, Parliament granted £20,000 to assist in building schools. Help was to be asked for either through the National Society or the British and Foreign School Society. Money was

only granted if local subscribers had promised an equal sum ; and it could not be got for any purpose except the actual building of the schoolhouse. But in 1839 a change was made, which finally brought about great developments in the life of the schools. A special committee of the Privy Council was formed, known as "The Committee of Council on Education," to deal with these grants, and then, for the first time, it was ordered that if a school had received a State grant for building, it must be inspected. At first, both the National Society and the British Society dreaded this ; it seemed like interfering with their freedom. But the Church was allowed to appoint clergymen to visit Church schools, and inspectors for Chapel schools were only chosen with the assent of the Society concerned, and so the difficulty was overcome. From 1840 State inspection began. The reports of the inspectors, who were intelligent, educated men, gave some idea of the actual state of the schools, for the first time.

The largest schools of 1840 were still being worked on the monitorial system founded by Dr. Bell and Mr. Lancaster. This system, at the height of its fame in 1810, had met a great need at a time when no grown-up teachers could be got. But it had long served its turn, and the monitorial school of 1840 had become an abuse. The schoolroom of such a school was generally a long lofty room, often with gothic windows and raftered ceiling and open fire-place. The master's desk stood on a platform, for, as the master was usually the one grown-up person in the building, he needed to survey the whole school. The children were grouped for each subject in little "drafts" of a dozen or fifteen children, and they stood, or sat on benches along the side of the room, and were taught by a boy or girl in charge, called "a monitor." This monitor taught them "spellings" from a sheet, or tables by rote, or words out of a book. At a signal, the groups all changed

for a new subject, and a new group came before each monitor.

In 1846 a critic said of the monitors :

"They are generally very young, rarely 13 years of age. I have found a boy of 9 teaching children of his own age, but their average age in boys' schools is 11. What, and how, shall they teach others? . . . They go heavily and unlovingly to it. A card in one hand, the other in their pockets, they go singly or in pairs to their work. What is it? A reading lesson, seldom with any questions, but with spellings afterwards. I have often stood by in silence, and heard the grossest blunders made. . . . The monitor takes no notice. He frequently does not recognize the blunder, if he hears it. In general, he does not hear it; his thoughts are elsewhere. Or, if he be . . . a sharp lad and attentive as a teacher, then he is almost invariably too sharp and too impatient of the slowness of his class."

Every evening, after school closed at four, the monitors were coached by the master; thus, they might be only one day in advance of those they taught. Moreover, in many schools there were no maps or blackboards, and sometimes no books except the Bible, which was used as a reading book because it was so cheap. It was because the monitors usually were unpaid,* and hence also cheap, that such schools were still to be found.

By 1845, however, many schoolrooms had been altered, to allow of a new plan of teaching. The part in front of the master's desk was left empty, and known as "the floor"; all the desks and forms were grouped in the middle of the great oblong room; and at the farther end, rose tiers of benches, such as may still be seen in some surviving old school buildings to-day. This part, called "the gallery," was partitioned or curtained off. The plan was, that while "drafts" or small groups might still work "on the floor" under monitors, or do work on their slates at the desks, a third at least of the children might go into the gallery, and have a real lesson from the master. Bible lessons were given there, and reading

* *In Manchester they were paid, and were far more competent than the average monitors.*

aloud also. The plan certainly did bring to the children a little more grown-up teaching.

The first difficulty to be faced was the shortage of grown-up teachers. Apart from the vicar and minister, the only adult teacher in the schools of 1840 was usually the master. He was generally of working-class family, and he was poorly paid. Dr. Kaye wrote :

“ There is little or nothing in the profession of an elementary school-master to tempt a man from a respectable livelihood . . . in trade or commerce. For what is the condition of a master of such a school ? He has often an income very little greater than that of an agricultural labourer, and very rarely equal to that of a moderately skilful mechanic. Even this income is to a great extent contingent on the weekly pittance paid from the earnings of his poor neighbours. . . . Some portion . . . may be derived from the voluntary subscriptions of the promoters of the school—a precarious source ! . . . He tries to eke out his subsistence by keeping accounts and writing letters for his neighbours. He strives to be elected parish clerk, or clerk to some benefit club. Those additions . . . barely keep him out of debt, and in old age, he has no prospect but hopeless indigence, and dependence.”

But many a man had entered on the despised work from a profound religious feeling that there he could do most good. Dr. Kaye saw that the life was only possible to men of tough fibre and such strong religious feeling.

To improve them as teachers, the first step was to train and instruct them. In 1840, Kaye took a large old house at Battersea, and went to live in it with certain boys, confided to him by charitable patrons, and with some older men who gave up their trades to become teachers. The life was a ceaseless round of housework, lectures, teaching, discussion, hard cramming, gardening, and religious service. With all this work, Dr. Kaye * hoped that his teachers would know far more than monitors. In addition, he put each student in charge of a small class, in a separate classroom, and made him teach the children orally. Many lessons also were given to the

* In 1843 Dr. Kaye married Miss Shuttleworth, and later became Sir J. Kaye-Shuttleworth. The Battersea College was taken over by the National Society, and teachers continued to be trained there.

whole school seated in the "gallery," on all sorts of subjects, both of general knowledge and of moral value. This "Battersea plan," with its spirit of enthusiasm and devotion, spread far and wide in National schools, and indeed in others as well. Battersea was the first of many training colleges founded by voluntary effort. But the need for better teachers was only partly met by the establishment of such a training college as Battersea.

So bad was the teaching that Dr. Kaye, who in 1839 had been made secretary to the Committee and Council on Education, worked out another plan; it was put into practice in 1846. If a school was efficient according to the inspector, the master might take promising children from thirteen years of age for five years as apprentices. He must teach each such child, and also give him practice in school work. For this the master, in addition to his school salary, got a yearly payment from the State, and the "pupil-teacher" a yearly stipend. At eighteen years of age the pupil-teacher might compete for a State scholarship tenable at a training college, and after two years at college might qualify as a "trained certificated teacher" by taking a Government examination. To the salary of such a trained teacher the State would contribute an additional £15 a year. By this plan, for the first time the State came right into the schools as a yearly paymaster. The number of schools with pupil teachers grew steadily, and the inspectors who had to examine them grew more important. Soon the State went further, and from 1853 paid a grant for every child who attended school for at least 176 days in the year. The pupil-teachers were a little better than the monitors. Here and there "certificated teachers" appeared. As the years went on, teachers came to like the inspectors, who encouraged them, tried to help them, and fostered intelligent teaching as far as they could.

Thus for some twenty years State help strengthened and

enlightened the schools. But in 1861 the State made a mistake, which deadened the whole education of the poor for more than thirty years. By a Royal Commission in 1860, three main points were made plain : there were not enough schools ; the attendance of each child was usually short and broken * ; and much of the teaching was still very bad. The commissioners, it is true, were not very deeply concerned about the evils of irregular attendance, but they were very much impressed with the evils of bad teaching. They therefore proposed a new system of granting money. All the old grants were to be swept away, and the new grants were to depend entirely upon the results of the examination of each child. £750,000 was now being spent annually on education ; therefore Parliament, anxious to get good value, approved of this plan, and in 1861 the " Revised Code " of Government rules was made. Seven syllabuses or " standards " in reading, in writing, and in arithmetic, were drawn up. Once a year the teachers presented all such children as they thought could pass a " standard," to the inspector, who examined them in reading, writing, and arithmetic. The child won a grant for the school if he passed, and lost money for the school if he failed. At the same time, grants to masters for pupil-teachers were abolished, and thus the children became the main money-earners of the school.

This system, known as " Payment by Results," upset the whole life and character of the schools. Teachers frequently asserted that they were obliged to resort to tricks to get the children through the appropriate standards, and in any case

* *In ten varied districts, the attendance was as follows :*

<i>Schools open</i>	<i>220 days.</i>		
<i>Attendance under</i>	<i>50</i>	<i>„</i>	<i>17 per cent. children.</i>
	<i>50-100</i>	<i>„</i>	<i>18 „ „</i>
	<i>100-150</i>	<i>„</i>	<i>20 „ „</i>
	<i>150-200</i>	<i>„</i>	<i>24 „ „</i>
	<i>above 200</i>	<i>„</i>	<i>18 „ „</i>

Thus more than a third of the children were absent half the time.

they were compelled to neglect quick children and force on slow and stupid ones. Inspectors no longer saw the schools in the old helpful fashion.

"The inspection day is the day towards which the eyes of all . . . are continually looking forward. The arrangements of the whole year are devised to meet the requirements. The course of teaching, the classification of the scholars, the daily progress of the subjects, the attendance of the children, the working staff, the time table, even the season of the year and the idiosyncrasy of the inspector, are one and all to be taken into account in their bearing on this great event."

After many years' experience of it, a London school-manager said :

"I have only to say that payment by results has worked out the most disastrous consequences in our schools. . . . I have come to see that it destroys the spirit of education."

One outstanding good result, however, had marked the period from 1830 to 1870. The efforts of all the religious denominations had increased the number of elementary schools, as the following table shows :

GROWTH OF SCHOOLS, 1830-1870.

	Estimated number of children needing elementary teaching.	Estimated number of children in elementary schools.
1837	"There seem to exist no sources of information in any Government department."	
1859	3 million	over 800,000 in State-aided schools ; number of others unknown.
1861	nearly 3 million	about 2 million.
1869	about 4½ million	{ about 1,300,000 in State-aided schools. about 1,000,000 in schools not aided.

Nevertheless, clear-sighted people knew that the population was increasing faster than the schools.

II. 1870-1902

By the end of the 'sixties, public opinion about education had altered greatly, for the power to read and write was now

almost necessary. Quite apart from religious needs, ordinary life in craft, industry and business now demanded knowledge only to be got from books. Therefore many working people now desired for their children the education that few had had themselves. Another great cause of change in the public attitude to education was due to the fact that in 1867 the Reform Act gave votes to the better-off workers in the towns. Hitherto, statesmen had judged the national feeling from the opinions of the religious people who subscribed to schools. Now Parliament cared for the opinion of the men whose children would go to working-class schools. Among these men, only a few minded whether their children got Church or Chapel teaching.* Most parents only wanted a school fairly near home, and fairly cheap.

On August 9th, 1870, the first general Education Act became law. Its aim was to provide school places for all the children still unprovided for. To do this, it allowed the religious societies † to continue and extend their work, and gave all work that they could not undertake into the charge of elected bodies of laymen. The Act divided the country into school districts. In each one, the Education Department ‡ was to survey the schools, and give notice to the religious societies at work there of the increases that were needed. If six months passed without action by the societies, the Education Department was to order the election of a School Board by all the rate-payers of the district. Within a year, this Board must set to work to build schools, and

* Here and there, chiefly in the country, Dissenters were obliged to send their children to the Church Sunday School, in order to gain admittance to the day school. Sometimes the difficulty was the other way round.

† Since 1847 schools maintained by Wesleyan and other religious bodies had been granted State help, as well as the National and British and Foreign Schools.

‡ The Education Department had been established in 1856, as a new Department of State. Its Head, the Vice-President of the Committee of Council, sat in Parliament.

manage them ; to pay for them, the School Board received a portion of the rates from the council, in a borough, or else from the parish overseers of the poor. Parliament continued to make grants both to the voluntary schools and to the new Board-schools. For the first time, these grants were promised even to schools which gave no religious teaching, for School Boards were allowed to omit all Scripture lessons, if the members of the Board so decided ; and Boards were positively forbidden to permit any distinctive catechism to be taught in their schools. Moreover, parents everywhere must be allowed to withdraw their children from the Bible lessons if they wished. All this was laid down to prevent any sort of religious compulsion. Such rules as these were necessary, now that everybody's child was to be brought into school.

The first Board-schools had to deal with many children who had never been in school, and often with parents who would never have sent them there. The boards might, if they chose, compel all children to attend between 5 years of age and 13, and could summon negligent parents to the police court.* The London School Board decided to use these powers ; London was therefore divided into ten districts, and in each a " School Attendance Officer " was appointed. It was his duty to go to every house, of whatever sort, and find out what children there were and where they were being educated. By these means, at last, sufficient schools were got ready, and the lists of children as well. In the poorest parts of Hackney, the attendance officer had great difficulties. He wrote :

" The work was entirely new, and in the popular mind considered ' un-English.' One remark was constantly heard : ' I had to work when I was as old as them, and they will have to do the same.' When I first began to visit, after I had asked the reason of absence, and pointed out that the law now required all children of certain ages to

* This compulsory attendance was made general for all districts six years later by the Elementary Education Act, 1876.

attend school regularly, and tried to tell them what an excellent thing this was, the parents would stand at the street door, and threaten and abuse me in the most dreadful language, and nearly all the people in the street would come out and sympathize with them."

All sorts of tricks were played when the officer called. Lively children were popped into bed, "ill"; great strong boys who had gone off to work were reported dead. As a last resort, the officer had to summon the parent before the police magistrate.

But little by little the attendance officer and the teacher won their way. By 1886 the London School Board believed that they had practically all the children in school. After 1880, all school authorities were allowed to use compulsory powers, and this, coupled with the teachers' influence, raised the whole attendance from about 1,600,000 children in 1870 to nearly 4,500,000 in 1886.

In the great towns, the Board-school buildings, surrounded by their high walls, began to rise up like islands, among rows of lower buildings. Often they were built on a new plan, to allow of the new "class teaching" which was becoming fashionable, as the number of teachers employed in a school increased. Such schools consisted of separate classrooms. In London the group for an assistant teacher was to be 60 children, and the classrooms were built accordingly. They were furnished with long uncomfortable wooden benches and desks, but were roomier than those in many voluntary schools, as the law compelled School Boards to give more space to each child. To us, many of these rooms seem badly ventilated and ill-lit. Into these Board-schools the children came crowding, after 1872.

The Orange Street School,* near the Tower of London, opened in 1874. Its pupils were the children of Bankside dockers, and Billingsgate labourers, who were not at all friendly

* *This school was in a district where neither Church nor Chapel had worked hitherto.*

to Mrs. Burgwin, the mistress. She had been sent to open the school with a staff of pupil-teachers, girls all under 18. Mrs. Burgwin said in 1886 :

" You could hardly bring a person down the street . . . without a blush of shame. The people did not think of putting window blinds up, they pitched everything out of the windows into the street, and certainly their language was shocking. Now, I can frankly say, provided the people are sober, whatever quarrel there may be going on, if they see a teacher coming up the street it is instantly stopped, and they would not give me a vile word."

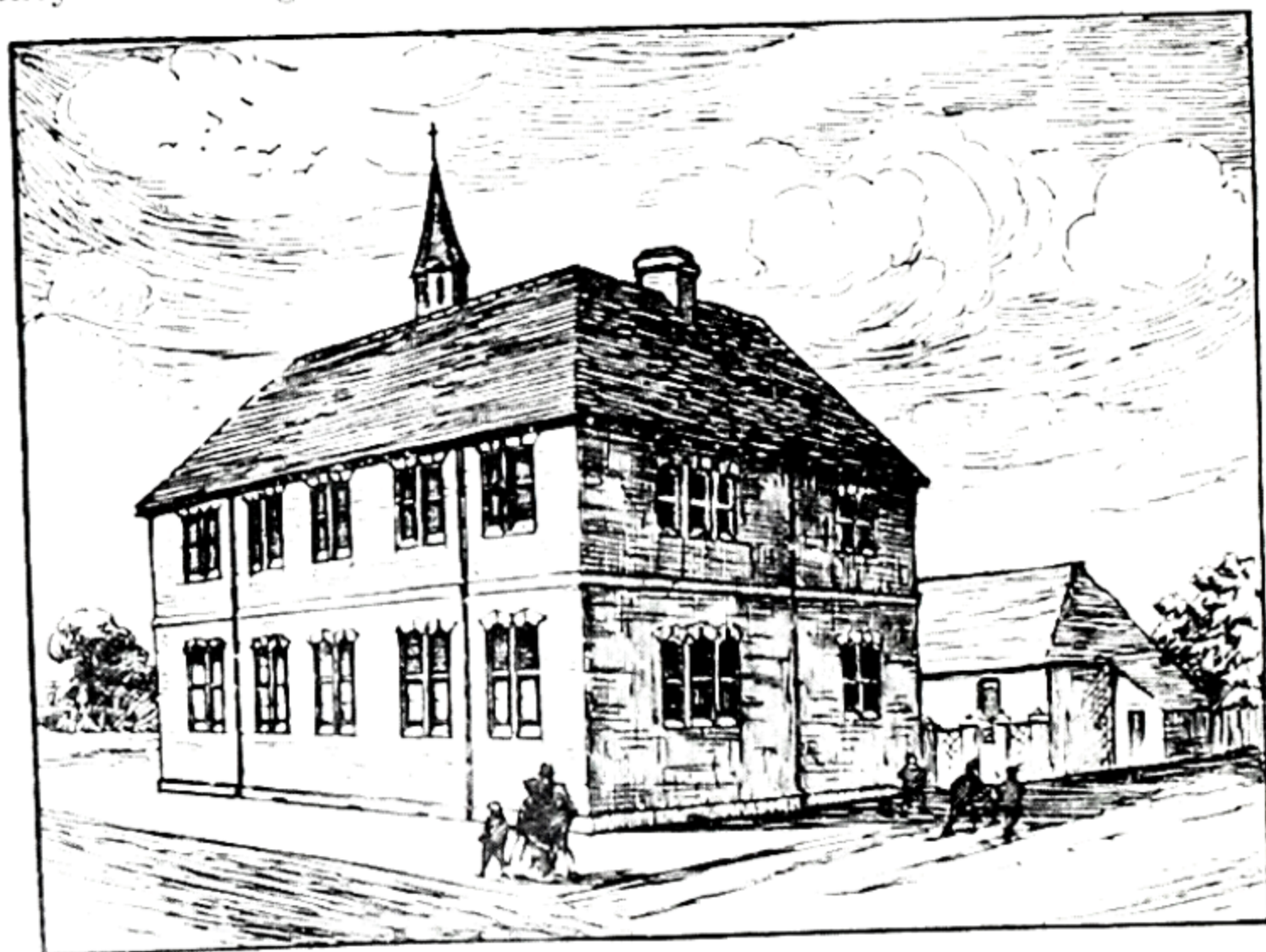


FIG. 31. — "The First "Board-School."

From "The Illustrated London News," 1872.

The first to be opened under the Act of 1870, in the autumn of 1872. It was at St. Austell, Cornwall.

The children were extremely difficult to teach. A few were deaf ; very many could not see well enough to learn from the blackboard ; some were paralyzed, and others apparently imbecile. The ordinary children were either so fidgety that they literally could not sit through a lesson, or else, if they sat still, they were apt to fall asleep. Mrs. Burgwin watched them out of school, and saw them run off, with a slice of bread and

a penny, to the pickle shop in the dinner hour. But they had not always got the pennies.

"When I opened the school in 1874, I found that the children were so weakly and so restless, and that if I did succeed in getting them to attend, they slept; so that I called in a doctor to talk about the children, and he said, 'Well, they are decidedly hungry.' So that even from 1874 I have provided dinners for them quite free, entirely free. 140 went to-day for the free dinner out of 220 present. . . . I generally manage it entirely among friends."

It was rather hard to set children like these down to the uninteresting grind of the standards in reading, writing, and arithmetic required to win grants. For the teachers were inevitably getting into dull ways, owing to the system of payment by results. A very experienced teacher planned out a reading lesson for little children. He took thirteen lines and would not let them read any more. He gave a "pattern reading" himself, and made the whole class read it over together, all at once, to get his exact manner. The aim was to drill the children so completely in the books used that when the inspector heard them read at the examination, every child should know every word, sometimes almost by heart. In arithmetic the same sort of teaching became very common, and, of course, it was very dull. In spite, however, of the widespread condemnation of the system of payment by results, it was not finally abolished until 1897.

For many years Board-schools were in the minority. In 1870 the voluntary societies had already 20,000 schools, and after the Act of that year was passed they put forth great efforts, and by 1885 had built more than 6,000 new schools. In that year there were in all only about 4000 Board-schools as against the 26,000 denominational schools. The schools which declined after 1870 were the ragged schools, founded by Lord Shaftesbury thirty years earlier for the poorest of the poor. The dame schools also slowly disappeared.

For thirty years, Board-schools and voluntary schools

worked side by side. But gradually causes of dissatisfaction arose, especially for Church people. The voluntary schools were poor. In a School Board district, every one had to pay the general education rate, and consequently, in such districts, many old subscribers to voluntary schools dropped away. This was more grievous to Churchmen than to Chapelgoers, for the religious teaching given in most Board-schools was quite acceptable to the majority of Nonconformists, whereas Church people did not like it, and clung to the catechism and the old Church teaching. Many schools supported by Dissenters, therefore, were transferred to School Boards; but not so with the Church schools. By 1902 the necessity of paying rates for schools whose religious teaching they disapproved was causing bitter resentment to many members of the Church of England.

Another difficulty had arisen. By 1902 many vigorous School Boards wished to provide education for children over 14 years of age. This they had no legal right to do. Yet even before 1883 in London, Leeds, Bradford, the School Boards had founded higher grade schools, where boys and girls might stay until they were sixteen. In 1900 the question of the legality of such schools came up in the Law Courts, and was decided against them.

III. 1902-1925

These two difficulties as to religious control of elementary schools and as to public control of secondary schooling came to a head in 1902 and led to the passing of our greatest Education Act. The Act of 1902 made changes so important that it marked the opening of a new era in education. In the first place, the specially elected School Boards were abolished. Powers far greater than they had wielded were handed over to bigger and more important authorities. In the year 1888

the new county councils, and, for very large towns, the new county borough councils, had been founded for purposes of local government, and an end had been put to the extraordinary tangle of local authorities which had grown up during the 19th century. Each of these councils had in charge the whole of its area, whether county or county borough, and had power to levy money in order to make roads, to guard health, to open public libraries, and even actually to provide and control some forms of technical education, besides doing many other things. By the end of 1902, in addition to all its other powers, each council of a county or county borough became the local education authority for its own area. It took over entirely all schools owned by the local School Boards. It also contributed, out of the rates, to the support of Church, Chapel and other denominational schools. The managers of the latter still continued to appoint the teachers, and to control the religious teaching, and they were to pay for the upkeep of the buildings; but all other expenses were to be met from the rates. At first this caused an outburst of the old conflict between the strong supporters of Church schools and those who feared any payment by the State for sectarian work. But this feeling has died away, and every year more schools are transferred by the religious bodies to the councils, so that council schools provided by the local education authority, are now in the majority.*

Under the Act of 1902 also, the councils might build and manage new secondary schools, and make grants to existing schools. They were also empowered to build and manage training colleges for elementary † teachers, and to make

* In 1903, there were over $3\frac{1}{2}$ million children in voluntary schools, and $2\frac{1}{4}$ million in council schools. In 1922, there were $2\frac{1}{2}$ million children in voluntary schools, and over 4 million in council schools.

† Elementary education meant schooling that stopped at 14 years of age. Secondary education meant schooling that went on to 16 at least.

grants to other institutions for higher education, including universities.

In addition to all this, the Act of 1902 made it possible for local authorities in the course of time to do for children, through the schools, things which were absolutely necessary for education, but which had not hitherto been thought of as "schooling." For example, in 1906 Parliament allowed public money to be spent on school-dinners for children who were actually needy. In 1907 another Act ordered that children should be examined by a doctor when they entered an elementary school and again when they left.* The law came into force in January, 1908; and in the same year, by the Children's Act, neglect of a child's health by parents was made a punishable offence; thus, for example, parents could be compelled to keep their children clean.†

Gradually, from 1908 onwards, school doctors were appointed, and their investigations proved that we were still, to a great extent, a dirty, unhealthy nation. Nearly half the little children, coming to school for the first time, had some trouble which could have been avoided. Their teeth were already bad, or their eyes strained or inflamed, or they had adenoids or rickets, or else were dirty and generally uncomfortable. Moreover, while a limited number of children came to school actually hungry, a very large number came satisfied, but fed on tea and tinned food and cheap sweets and relishes.

As soon as all these facts came forth, teachers and voluntary workers, and education committees, began to try to get means of treatment, and strove to induce parents to

Ordinary boroughs with a population over 10,000, and urban districts with a population over 20,000, received control of their own elementary schools, remaining under the county council for secondary and higher education.

* *The Education (Administrative Provisions) Act, 1907.*

† *Since 1893, education authorities had been bound to provide special schools for blind and deaf children. Since 1899 they might provide for mentally deficient children, but few had done so, because such schools are very expensive.*

use them. "Care Committees," composed of volunteer workers, were attached to many schools. But there were two main difficulties. In most places hospitals were over-full, and many parents could not afford ordinary doctor's fees. Thus, though school doctors might order treatment the child might not get it. Secondly, though careless parents might be prosecuted for neglect, this did not help the child; often it took months to persuade a parent to act. Very soon after 1907, therefore, some education committees appointed a "School Nurse." * In her cap and uniform, she was present with the doctor at the medical inspection, and after it she went to see the parents. She came into school, between the doctor's visits, and looked at heads, and troublesome ears and sore fingers and other small ailments. Very soon, in some towns, she began to tell the children to come to the clinic. The school clinic is a place where real medical treatment can be given. Usually the parents pay a small sum. The first school clinics opened were those of Bradford and York in 1908. But in 1911 there were only 33 of them, for many authorities were backward in spending money.

The War of 1914 to 1918 gave a great impetus to this health work, partly because of the value it set on child-life, and partly because of the army medical inspections, which proved that many men were unfit, who might have been healthy. In 1918 a new Education Act ordered all education authorities to provide children with treatment, and by 1923 there were over 800 school clinics. All sorts of buildings have been utilized for them. At Widnes, a large Army hut has been divided into rooms for dentist, oculist, doctor, and school nurse. At Hastings, an old public-house is now a clinic, and in a poor part of London, two ordinary little villas, standing side by side, have been used.

* In 1911, 183 local education authorities (out of 317) had school nurses. In 1923, 315 districts had them, and there were over 4000 of them.

Out of the work of the school clinic has grown that of the "Nursery Schools." In 1908, Miss Margaret MacMillan opened the first school clinic in London, and soon saw that the same children were coming back time after time for treatment of the same troubles. She saw, too, that the little children who came to school for the first time were already dirty, and rickety, and delicate in chest and throat and eye. So, from the time when she moved her work to Deptford (1910), she invited younger brothers and sisters of the school children to come to the clinic. From all the poor streets round, mothers brought little creatures of two and three and upwards, suffering chiefly from lack of proper food and proper washing and fresh air. From 1911, Miss MacMillan took charge of them for the whole day, from eight in the morning, washing them, dressing them, feeding them, putting them out in the garden to play, and causing them to rest, actually in the open air or in shelters well open to the sun and light. Thus a new kind of school for children from two years old to six has begun, with life in a garden, and a proper nursery training as its main aims. As yet there are only a few "Nursery Schools," but these few seem to be signs of what may come in the future.

The Act of 1902, besides leading to these great changes in the elementary schools, opened up by means of scholarships a path for the more fortunate children to pass on to the secondary schools, and then to the training college or the university. Of this wider work there is no space to speak. As a nation we have long undervalued our schools. We have treated elementary education as a sectarian matter and secondary education as the privilege of certain classes. But these old views are rapidly giving way, and belief in the value of school-life is growing. New measures for the education of adults are being attempted. We are on the road towards an educated England.

BOOK LIST

Author.	Book.	Publisher.
Archer, R. L. . .	Secondary Education in the 19th Century	
Board of Education	(1) Annual Reports (2) Annual Reports of Chief Medical Officer of Health	<i>H.M. Stationery Office.</i>
Coleridge, C. . .	Life of Charlotte Yonge . .	<i>Macmillan.</i>
Kaye-Shuttleworth, Sir J.	Four Periods of Public Education	<i>Longmans.</i>
Sadler, Sir M. E.	Lectures on Education . .	<i>Manchester United Press.</i>
Stephens, W. R. W.	Life of Dean Hook	<i>Bentley.</i>
Stevinson, E. . .	The Open-Air School	<i>Dent.</i>
Parliamentary Paper	Report from the Select Committee of the House of Commons on the Education of the Poorer Classes, 1837—38 Report of the Royal Commission on Popular Education, 1861	<i>H.M. Stationery Office.</i>

The Victoria County Histories (*Constable*) have articles on schools in each District.

CHAPTER X

THE BIBLE AND SCIENCE

EVER since the Bible was first published in English, it has been one of the most important influences in our life. In it men read, in simple language, how the world was first created, and how plants, animals, and man himself came into being. From it they gathered all that they knew of the early history of mankind. It explained for them the causes of the sin and suffering they saw around them. It gave them drama, poetry, and philosophy, to guide their lives. Thus when the Industrial Revolution brought its changes, and gave the world, in many eyes, a sadder and more serious cast, it was on the words of the Bible that many people leaned for help. The Bible held a unique place ; not only did it give good counsel, but it was to our forefathers the only Book in the world that had a direct Divine origin.

But during the 19th century a great division of opinion about the Bible took place. With new scientific knowledge, people began to look upon man as a being created in a different way from that described in Genesis. For a time, many men thought that this meant the destruction of the Bible and its teaching of every kind, and a bitter struggle broke forth. This chapter deals first with this great change, and then traces the way in which the Bible has won a different position.

The dividing line between the earlier beliefs and the stage of struggle may be drawn in 1859, when Darwin published,

"The Origin of Species." It was not in the sincerity or the intensity of religious life that men and women before that date differed from men and women of to-day. It was in their attitude to the Bible as a strictly literal statement of the facts of history and of science. Before that date, by many, the Bible was still looked upon as a Book designed by God to teach men all that they needed to know on these matters. The Bible account of the Creation, and of all the early history of men was accepted as literally true, and scholars pored over the years of the Patriarchs, and from them computed the age of the world. In the reign of Charles I, Archbishop Usher had made out that it was 4003 years, 2 months, 11 days, and 6 hours from the Creation to the Birth of Christ, and to this day, at the tops of the margins of the Authorized Version, Usher's dates are marked.

Belief in the Bible, in its full simplicity, is shown in the lives of Lord Shaftesbury (1801-1885) and of Philip Gosse (1810-1887). Lord Shaftesbury lived, so to speak, Bible in hand. Its dignity moved him, so that sometimes, when reading it to his wife, he was agitated almost to tears. As to its literal historic truth, he had no doubts. In 1839, he visited a Scottish historian, Mr. Alison, who was just finishing his "History of Europe." Both men took the Bible as the certain foundation of historical study. Shaftesbury wrote :

"Alison is a man after my own heart ; we agree in our views of ancient and modern history ; we hold the same opinion of the future, and we never tire in discussing the same subjects. He . . . sees the first chapter of Genesis in the history of all kingdoms, peoples and nations. . . . He plainly discerns the French Revolution in the Apocalypse, and is now engaged in the composition of a closing chapter to his history in which he will show the whole struggle in the world, from Adam until now, springs from the truths revealed at the Fall."

Philip Gosse was somewhat younger than Lord Shaftesbury, and of poor, obscure family. He earned his living as a lecturer and writer on Natural History. In 1848 he married,

attracted to his wife by finding in her an intense religious life, and an absorption in doctrine fully equal to his own. Gosse's son writes of his parents :

" In order to realize [my mother's] condition of mind, it is necessary to accept the view that she had formed a definite conception of the absolute, unmodified, and historical veracity, in its direct and obvious sense, of every statement contained within the covers of the Bible. For her, and for my father, nothing was symbolic . . . except what was in so many words proffered as a parable. . . . Pushing this to its extreme limit, and allowing nothing for the changes of scene or time or race, my parents read injunctions to the Corinthian converts without any suspicion that what was apposite in dealing with half-bred Achaian colonists of the 1st century, might not exactly apply to respectable English men and women of the 19th."

Like Lord Shaftesbury, Mr. and Mrs Gosse ruled their daily life by reference to the Bible.

" My parents founded every action, every attitude (of mind) upon their interpretation of the Scriptures."

How to face life without the written authority of God, they never sought to know. Mr. Gosse wrote in a letter :

" If the written word of God is not absolutely authoritative, what do we know of God ? What more than we can infer—that is, guess, as the thoughtful heathen guessed ? . . . What do we know of Eternity ? Of our relations to God ? Especially of the relations of a sinner to God ?"

Although Mr. Gosse was an outstanding character in a special religious group, yet people could be found in any religious body thinking of the Bible more or less in the same way. Charlotte Mudge was a High Church woman, and yet she believed as Gosse did.*

The time of trouble that lay before men like Gosse was caused by the fact that science which for them was so plainly revealed in the Bible was being challenged and contradicted, as scientific knowledge grew.

In 1830, Natural Science was only beginning to take modern shape. Its leaders believed that each single existing

* See her letters and her teachings on the Catechism.

species of creature and plant had been made at one stroke in 4003 B.C., and had remained unaltered ever since. The idea of gradual change through thousands of years, had as yet occurred to very few. Hence men eagerly interested in Nature devoted themselves to finding as many species as possible, examining, describing and classifying. There was much scope for this work, as very little indeed was known about the earth and its denizens. Gosse was a figure typical of his time. From 1836 onwards, wherever he dwelt, in Newfoundland, Canada, Jamaica and England, he collected and described birds and insects and sea-creatures. His son wrote :

“ My father was for ever in his study, writing, drawing, dissecting, sitting absolutely motionless with his eye glued to the microscope for twenty minutes at a time. . . . [on the sea-shore] the way in which my father worked was to wade breast-high into one of the huge pools, and examine the worm-eaten surface of the rocks above and below the brim. . . . When as much had been collected as we could carry away—my father always dragged about an immense square basket, the creak of whose handles I can still fancy that I hear—we turned to trudge up the long climb home.”

Geology, too, was looked upon as the study of a fixed and finished earth. As Genesis told, God had made the world, with all the present rocks lying as they are now. They had been modified since the Creation by the Deluge, and afterwards by the rain and snow and the waters of the earth, but they had been made, complete and final. Hence in geology, too, men gave themselves to the study of the rocks, because in them, as in the minute study of creatures, man could come very close to the work of God as He had left it nearly six thousand years before.

It was through the work of these eager students that new facts were learnt which ultimately led to the attack on these fixed views. A land surveyor, William Smith, had noticed that the strata in different rocks always lay in the same order, in whatever district the rock might be found ; he also saw that one kind of fossil seemed always to belong

to one particular kind of rock. Little by little, a clergyman, Dr. Buckland, traced Smith's strata, and in 1815, completed the first geological map of England. He proved, too, that hyenas and bears had once lived in England. Moreover, at Lyme Regis, in 1824, a poor woman who lived by selling fossil shells from the cliffs to visitors, found the bones of a strange beast quite unlike any existing animal.* It was akin both to fish and to reptiles. The name "Ichthyosaurus" was given to it. Other similar discoveries followed. Thus was proved the past existence of creatures quite different from those we know, although like them in some ways. These discoveries compelled geologists to ask new questions. When, and how, had the Ichthyosaurus ceased to be? If those were the beasts of ancient days, and not our modern animals, how had these latter come into being? Could there have been a second Creation? Dr. Buckland thought that the Deluge had completely wiped out certain species, and that there had been more than one total deluge at different times. Yet not all geologists could agree with him, for they saw no signs of these deluges in the rocks. In 1830, there appeared "The Principles of Geology," a book in which Charles Lyell, a Scottish geologist, gave quite a new answer to all these questions. He believed that rocks had been brought to their present state by slow deposit, volcanic action, gradual rise and sinking, and other natural forces which can be seen acting around us at the present time. He believed, "that no causes which have ever acted, but those now acting." Thus he thought of the rocks and hills and valleys as having been made not once and for all six thousand years ago, but as being constantly exposed to natural forces and undergoing natural changes. Thus began, for geologists, the struggle between the literal understanding of the Bible and the results of science.

* They are now in South Kensington Museum.

In the earlier part of his life, Charles Darwin represented his time. He thus wrote of himself as a child in his country home near Shrewsbury :

“ I tried to make out the names of plants, and collected all sorts of things. [Throughout schooldays] I continued collecting minerals with much zeal, but quite unscientifically ; all that I cared about was a new-named mineral, and I hardly attempted to classify them.”

When he went to Cambridge in 1828, to study for Holy orders, his real interest in life was still in collecting. Beetles, in particular, were his special delight, and in his old age he would recall the exact tree stump or bit of paling where he had caught a rare specimen. But in Cambridge he learnt to know a man whose aim was to do more than collect—to draw conclusions from long-continued minute observations. This was Professor Henslow, a botanist, who made a profound impression on Darwin's mind. Henslow was deeply religious and very orthodox. He it was who told Darwin to study Lyell's new book, “ But,” said he, “ on no account accept the views advocated in it.” Darwin was to learn much both from Lyell and from Henslow.

In 1831 Henslow heard that the Government was sending a vessel to chart the South American coast, and that the Captain wanted to take a volunteer naturalist to collect marine and land creatures, plants and minerals. Henslow knew that Darwin's father was rich, and obtained an offer of the post. In December, 1831, Darwin set sail in H.M.S. *Beagle*, and was away for five years.

At his return in October, 1836, he was altered. Although he had gone out as a collector, he came home much more than this, a theorizer as well ; as he had himself said of Henslow, he was now “ a man who longed to draw conclusions from observations.” He had accepted Lyell's belief about the making of the rocks ; and a question about the creation of animals had long been troubling him. Among the Galapagos

Islands, he had noticed that the plants and animals on each island, though much alike, differed just a little from one another, although the islands themselves seemed to be of fairly recent origin. How could this be explained? Had separate sets of denizens been created for each island? Darwin could only think of one answer that he could believe in: that the creatures were all descended from some original stocks, and had altered, in each island, because of varying conditions. This, however, needed proof. He thought if he could collect all the facts about variations in animals, he could perhaps test the possibility of his idea. "My first note-book was opened in July, 1837," he wrote; and for more than twenty years, nothing turned him aside from the work. In 1858, he learnt that Alfred Russel Wallace, a collector in Malay, had come to conclusions very like his own; short papers by Darwin and Wallace were read at a learned society, and were heard with intense interest. In November, 1859, was published "The Origin of Species."

Darwin's question had been, "Is every kind of creature a fixed, unchanging thing made of old by a special act of creation, as Genesis tells, or not?" His answer was: "No; each kind can and does change gradually; species are mutable, and are being modified around us every day." He detected causes producing these changes. These causes were, first, "variation," the tendency of every creature to have offspring somewhat different from itself. The second cause was "the struggle for existence," explained by Darwin thus:

"As many more individuals of each species are born than can possibly survive, and as, consequently, there is a frequently recurring struggle for existence, it follows that every being, if it vary . . . in any manner profitable to itself . . . will have a better chance of surviving, and thus be naturally selected."

Darwin's teaching put the alteration of species by natural selection among varying individuals, in the place of special

acts of creation. In place of "catastrophes," wiping out whole species, it put the extinction of weak, ill-suited races, by fierce attacks from stronger ones, lack of food and maladaptation to climate.*

Darwin saw that his theory must alter a man's view of God. Instead of a Creator working by sudden acts of creation and destruction, was there not a Creator who "made creatures make themselves?" † In the final sentences of the "Origin of Species" Darwin faced this idea.

"Why, it may be asked, have all the most eminent living naturalists and geologists rejected this view of the mutability of species? . . . The belief that species were immutable productions was almost unavoidable as long as the history of the world was thought to be of short duration. . . . Authors of the highest eminence seem to be fully satisfied with the view that each species has been independently created. To my mind it accords better with what we know of the laws impressed on matter by the Creator that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes. . . . When I view all beings not as special creations, but as the lineal descendants of some few beings which lived long before the first bed of the Silurian system was deposited, they seem to me to become ennobled. There is grandeur in this view of life with its several powers having been originally breathed by the Creator into a few forms or into one; and that, while this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning, endless forms, most beautiful and most wonderful, have been, and are being, evolved."

The "Origin of Species" was received with intense interest; the first edition sold out in a day. Many scientists could not on religious grounds accept it. Professor Henslow could not; Professor Sedgwick, the Cambridge Professor of

* Darwin himself saw clearly that his explanation did not touch the real "origin" of change. He wrote: "Some have imagined that Natural Selection induces [i.e. brings about] variability, whereas it implies only the preservation of such [varieties] as arise." He saw clearly that variations, when they occur, bring about new forms. But of the causes of the variations, he said openly that he knew nothing ["Origin of Species," Chap. V.]. The belief in evolution was concerned with means of preserving and varying forms of life, not with its ultimate cause. Since Darwin's day, the mechanism for handing life on has been studied closely, but the real cause of any variation is still not understood.

† Kingsley's phrase in the "Water Babies," 1862.

Geology, could not. Its effect on Mr. Gosse is thus described by his son :

“ My father’s attitude towards the theory of natural selection was critical in his career. . . . Let it be admitted at once . . . that every instinct in his intelligence went out at first to greet the new light. It had hardly done so, when a recollection of the opening chapter of Genesis checked it at the outset. He consulted with Carpenter, a great investigator, . . . and they both determined, on various grounds, to have nothing to do with the terrible theory, but to hold steadily to the law of the fixity of species. . . . Where was his place, then, as a sincere and accurate observer ? Manifestly it was with the pioneers of the new truth, it was with Darwin, Wallace, and Hooker. But did not the second chapter of Genesis say that in six days the heavens and earth were finished. . . . ? Here was a dilemma ! Geology certainly seemed to be true, but the Bible, which was God’s word, *was* true. . . . To a mind so acute and at the same time so narrow as that of my father, a check of this kind is agony.”

He made his choice, and therewith became a mere “ honest hodman of science,” as Huxley called him with his terrible scorn. To many other men, the acceptance and rejection of Darwin’s theory was an agonizing choice ; and many passionately refused to listen to it, and bitterly condemned it. Darwin said once, “ It is painful to be hated as — hates me.”

Some men of science, however, accepted the theory of evolution at once. Huxley became a violent partizan ; Lyell the geologist, and Hooker the great botanist, were “ converted,” as they said. They felt that the mighty theory gave just what the natural sciences needed, a clue to interpret the mass of accumulated facts. Gradually, during the next twenty years, the theory was accepted more and more widely by scientific men. In 1887, Huxley wrote :

“ The ‘ Struggle for Existence ’ and ‘ Natural Selection ’ have become household words and everyday conceptions. . . . Wherever the biological sciences are studied, the Origin of Species lights the path.”

At last, Darwin’s teaching worked its way into ordinary talking and thinking.

One great result of the change in scientific thought was that, in the years after 1860, many evolutionists definitely

turned away from the Bible. Seeing that the account in Genesis could not possibly be reconciled with the evolution theory, they rejected the whole of the Bible. They held that God had revealed Himself in His rocks and in His creatures rather than in any written Book or Books. Because the literal truth of Genesis was, for them, destroyed, many men cast the Bible aside, as though it contained nothing but worn-out science and history. All the moral and religious thinking contained in other parts of the Bible was lost to them. Many felt that they could not tell much about the ultimate purposes of life, and called themselves Agnostics, or "those who do not know." Thus there arose a bitter difference between those who based their opinions rigidly upon demonstrable physical fact, and those who believed that God spoke to human souls in mysterious ways, not always akin even to sight or sound. Huxley's biting arguments against the New Testament were horrible to men like Lord Shaftesbury, and to women like Charlotte Yonge. There was a gradual upheaval of belief in matters which had been fixed for ages long. This brought intense personal suffering to many on either side.*

II. 1870-1925

At the present time, the position of the Bible has again altered greatly. There have been changes both in men's belief about the Bible, and in their knowledge about it. On the whole, the result has been that they treasure it nowadays, and pay to it a reverence which was denied by many, thirty years ago.

Two main trends of thought have brought this result about. The first was the working out of the idea of Evolution. The new theory obtained such a hold on men's minds that

* The doctrine of evolution is still accepted by scientists, but many facts about it have been discovered, and many new theories suggested since Darwin's time. Not all scientists now accept Darwin's idea of the causes which produce evolutionary changes.

they carried it on from biology, and applied it not to physical phenomena only, but to all kinds of human history, and even to man's mental and spiritual experience. There can only be a loose resemblance, however, between things of such different sorts. Yet the theory overflowed into every kind of study and thought. Men began to see a gradual adaptation to new conditions in the history of past institutions and in the study of ancient philosophy, and even in that of religion in all its shapes and guises. This idea of evolution in religious thinking led students to interest themselves in every possible manifestation of it, in early India, Egypt, Babylon, Mexico, Peru and Greece. Moreover, evolution taught men to regard mankind as one great connected family. Hence it aroused interest in the folk-lore of all races, and in existing barbaric customs. Gradually, and certainly by 1890, educated men and women began to think of the Bible as the expression of man's growing thoughts about God, and not as a book which had been given to them fully made. It is now looked upon as a library, in which the volumes placed first are not necessarily the earliest; it was formerly read as a history book, arranged in chronological order. Under the impulse of the evolution theory, people turned eagerly to study the Bible as a gradually formed piling-up of religious writings. As early as 1806, a German scholar had traced the work of two writers in the Book of Genesis. Modern scholars have gone much further in the study of the first five books. They think that Deuteronomy stands alone, and is one complete book, written probably about 621 B.C., or a little earlier. The Book of Leviticus is, they believe, for the most part a code of priestly law. But Genesis, Exodus, and Numbers may contain stores of various sorts, tales told to the Hebrews by strangers, and teachings given by many different wise men. These stories and teachings are, according to this view, scattered almost regardless of order through the books,

but they can be gathered into three separate groups. Each group reflects a distinct, different view of God. Each one seems to belong to a different stage of Hebrew thinking, and to a different time. Before they had been distinguished, man had looked upon the earliest days as those nearest to God, when "He walked in the Garden with Adam." But now a wonderful thing appeared. There had evidently been a continuous advance in the religious life of the Hebrews. In the earliest times Jehovah, their God, seemed to them a tribal deity, who was sometimes fierce, terrible, and even unjust. But after centuries, they reached conceptions of God which nowadays lie at the base of all religious thought. This was the great belief which people won from the Bible, when they approached it with minds full of the evolution theory.

In the second place has come the re-establishment of belief in many facts and personages of the Bible. In the 'eighties and 'nineties, many people accepted fully the idea of Genesis as a perfectly unreliable historical account, and went on to think that the rest of the Bible was no more true than Genesis. Many even disbelieved in the existence of Christ as an historical figure. But a vast growth of archaeological knowledge has re-established many of the facts lying behind the text of the Bible, and given quite a new significance to much that had come to be regarded as mythical.

Our knowledge of ancient worlds whose very existence had been long forgotten, has come first through the recovery of old lost languages, and secondly by the excavation of sites. The first language to be reinterpreted was the Egyptian. The discovery of its meaning had already been prepared long before Darwin's time. It was mainly achieved by the study of the Rosetta Stone. Where the western arm of the Nile flows out into the sea, stands the town of Rashid, or Rosetta. When Napoleon was making his campaign in Egypt, the French fortified this place, and in August, 1799, a company

of soldiers was at work there, under the command of an engineering officer, named Boussard. Among the rubbish on the ground, this officer noticed a large slab of dark stone, covered with cut characters. He recognized some as being Greek, and thought that the others might be of interest.

This block was called the Rosetta Stone. As the drawing on this page shows, there is a threefold inscription cut on the face. The top and middle ones are both written, as we know now, in the Egyptian language. The lowest one is in Greek, and the writing is in the Greek character. The other two are in the two different kinds of script used in Egypt in the 2nd century before Christ. The topmost inscription is in the very old



FIG. 32.—The Rosetta Stone.

picture-writing that had probably been the earliest form in Egypt. It had been handed down for centuries among the priests, and is called by scholars the Hieroglyphic, or Sacred carving character. Each "letter" had originally been a picture of the object meant. The middle inscription was in the other Egyptian writing, which had grown by many stages out of the hieroglyphic writing, in the course of many centuries. In this script the signs are quite conventional, like our own, and have ceased to have anything to do with pictures. Thus there was a great deal to find out from the Rosetta Stone. But scholars knew neither the sounds for which the Egyptian signs stood, nor the words in the language written in these signs,

Fortunately, the stone had fallen into the hands of intelligent people who took care of it. Boussard gave it to his General, as an object of high interest, and Napoleon ordered that it should be put in the museum which he had founded in Cairo. Moreover, he caused copies of the inscriptions to be made and sent to scholars in different countries. In 1801 Sir Ralph Abercromby drove the French to capitulate; and then, in the treaty made, the Rosetta Stone was specially bargained for, and finally handed over to the British. By 1802 it was being exhibited in the British Museum, where it is on show at the present day.

English scholars at once began work on it, and foreign scholars were busy too, thanks to the copies existing in France. The Greek part was read without great difficulty. In it occurred the name of King Ptolemy; and in the uppermost inscription there occurred certain groups of characters enclosed in the lozenge-shapes which, as students had already guessed, mark Egyptian royal names. Three such groups can be seen in the sixth line. Starting from this, scholars identified one letter after another.* A young French student, Champollion, was the first to cast light on the language, by comparing it with Coptic, the Egyptian tongue of the 1st century A.D. Very slowly the whole work progressed. At last, in 1880, a great German scholar, Erman, published grammar and dictionary not only for one Egyptian language, but for each of the forms used at different times in the long history of the land. From that time Egyptian hieroglyphic writings have been practically readable, and stores of literature have been opened.

The recovery of the Babylonian and Assyrian languages

* One other double inscription had been discovered, in which the name "Cleopatra" occurred. "Cleopatra" was compared with "Ptolemy" and so a few more letters established. The story of the complete unravelling of the writing is excellently told in "The Rosetta Stone," published by the British Museum, 6d.

came about in an equally dramatic way. Excavation at Nineveh (now Mosul), the Assyrian capital on the Tigris, began early, and in 1847 Layard unearthed the magnificent bulls and wall-sculptures at Nimroud.* He found, too, libraries of written tablets in the wedge-shaped "cuneiform" character, but they could not be read. The riddle was solved

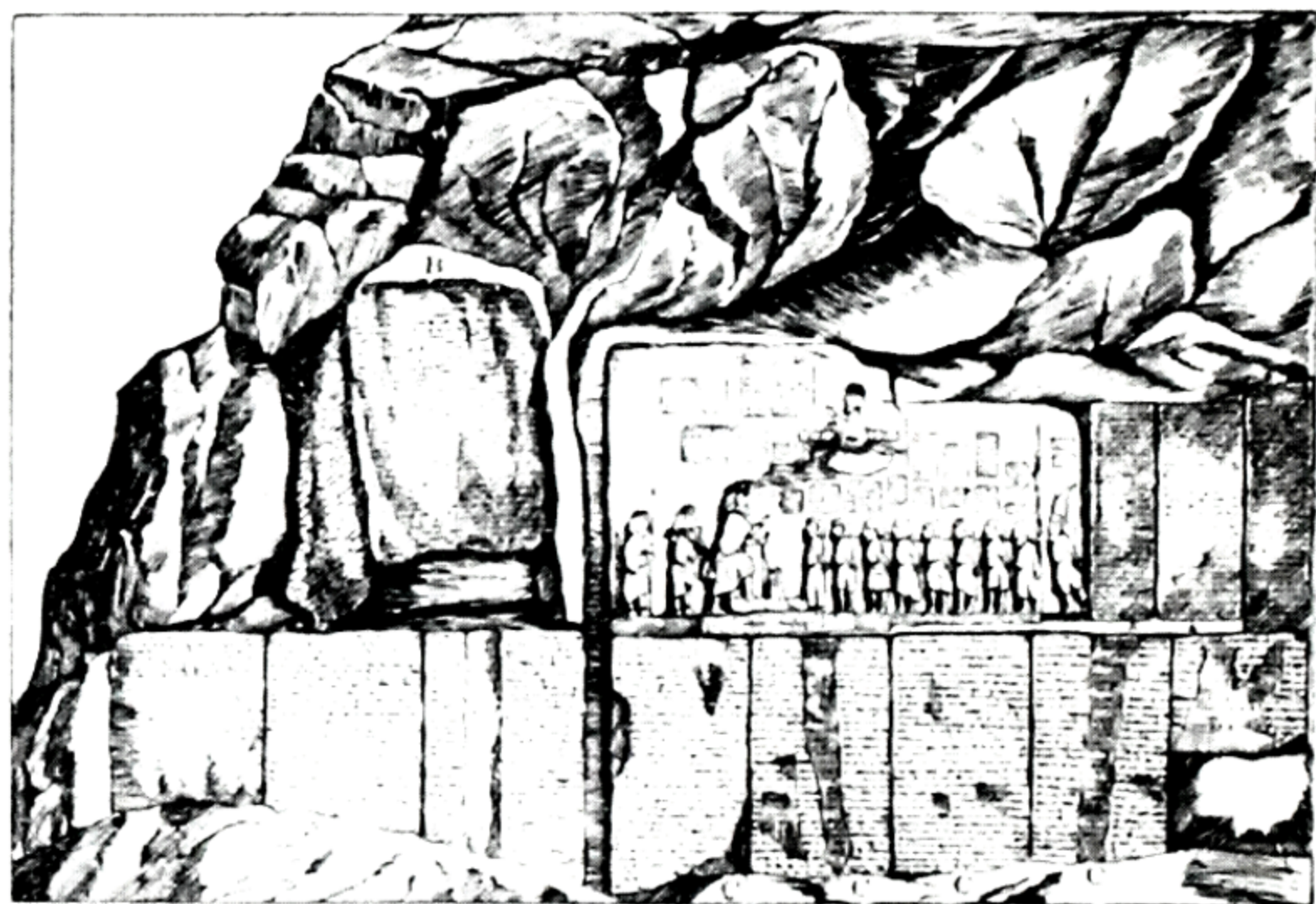


FIG. 33.—The Trilingual Inscription on the Rock of Behistun.

From Sir H. Rawlinson, "Persian Cuneiform Inscriptions."

The scene in the middle represents King Darius in triumph, with his foot upon a prostrate captive. Other prisoners stand before him. The Tablets marked A, A, are inscribed in the Median or Elamite language; that marked B, in Babylonian; and those marked C, C, C, in ancient Persian.

unexpectedly. An English officer, Henry Rawlinson, was resident in Persia, and knew the modern Persian language, and he began to try to decipher the ancient Persian writing, which was cuneiform. On a tour, in 1835, he heard of ancient sculptured rocks at Behistun, high up above a little village on the old high road from Babylonia to the high

* Now in the British Museum.

country of Media or Elam. He reached the place, and found the sculptures pictured on p. 240. The three inscriptions were in three different cuneiform writings, and one was damaged by a torrent which fell down the rocks. Rawlinson climbed up with difficulty, and managed to get copies and drawings. But it took two subsequent visits to complete the work. At the time of the third and most successful visit in 1845, Rawlinson was a political agent and living in Bagdad ; there he deciphered the first of the three inscriptions which he had traced. It was in ancient Persian. It told that the king was Darius, who conquered the rebels, as shown in the picture on p. 240, in 521 B.C. From this, Rawlinson and other scholars managed, between 1846 and 1851, to read the partly effaced Babylonian-Assyrian cuneiform.* It was a great achievement, because it opened all the stores of the Assyrian libraries just discovered. Rawlinson came home at last, to work on Layard's tablets at the British Museum, and gradually worked out the long list of the kings of Assyria, stretching far back, even beyond 4000 B.C. Moreover, he and his assistants interpreted Babylonian-Assyrian tales and chronicles and poetry, so that quite a new picture was formed of life in Babylonia and Assyria, and much was found to have existed there which was known also to the Hebrews. Moreover, the reading of Assyrian cuneiform led to the reading of much older Babylonian cuneiform, and these earlier Babylonian writings carried back history and legend far beyond the days of David.

Last of all, came the rediscovery of a race whose very name had perished. Scholars noticed on Assyrian tablets cuneiform letters a little unlike the usual ones ; by degrees, they separated these out, and recaptured a most ancient language, which they called the "Sumerian" language.

* *The third inscription was deciphered in 1852 and found to be in Elamite.*

Since then, the actual remains of the civilization of these people have been found. We know now that they dwelt between the lower courses of the Euphrates and the Tigris from some unknown, ancient date, about 5000 B.C., until they were conquered between 2400 B.C. and 2100 B.C. by people from the Arabian desert. In 1923, at Tel Obeid, a temple belonging to this race was excavated, and the dedication inscription found. This writing is the oldest written thing known, as yet, in the world's history. Moreover, an even more valuable find was made in 1901, at Susa, in the mountainous country east of the head of the Persian Gulf. There was discovered a whole code of laws, drawn up by Hammurabi, the king of Babylon, who finally conquered the Sumerians about 2100 B.C. This great king is called "Amraphael of Shinar" in the Book of Genesis, for the memory of his rule lingered on and on even among the wandering tribes who were not completely subject to him. When the Hebrews came to write their history, they put down their great hero, Abraham, as living in the time of Hammurabi. Moreover, many of their own stories, preserved in the Book of Genesis, resembled those of the people of Sumer or "Shinar." Even some of the laws of Hammurabi's code are the same as those of Genesis. The memory of the great temple at Ur is now thought to remain in the Hebrew tradition of the Tower of Babel.

Archæology has also roused fresh interest in various facts told in the Bible, by finding places and things actually referred to there, just as it had done in the study of Greek legend. Scholars had come to look upon the tales of Troy as myths merely, when, in 1870, Schliemann, a German archæologist, actually found the site of the city, built upon the ruins of earlier cities much more ancient. Hence it was necessary to think of the Homeric poems as being related to historic truth. So, too, in the last few years, English and

American workers have explored Ur of the Chaldees, and have found the great temple of the city. Great flights of steps led up to the buildings, which diminished, storey by storey, and were crowned by a central tower of deep blue brick. It has been possible to sketch a restoration of it all as it may have stood two thousand years before Christ.



FIG. 34.—The High Place at Gezer.

From R. MacAlister, "Bible Sidelights from the Mound at Gezer."

(By kind permission of the Palestine Exploration Fund.)

Originally there were ten of these stones or pillars. They are of rough stone, not hewn, probably because they were holy. Until the excavation from 1902 onwards, they were buried in soil up to their tops. Apparently they were holy objects of the early Semitic people, who first came to Gezer before 2000 B.C. Later, buildings were added to the High Place, and other gods worshipped.

The things found by the explorers often reveal the meaning of many Hebrew sayings in quite a new way. Between 1902 and 1909 the Palestine Exploration Fund uncovered a "High Place," such as the later prophets of Judah and Israel condemned. This was at Gezer, a city

mentioned in the Old Testament, of which nothing but a bare rocky mound is visible now.

The High Place at Gezer consisted of a row of ten unhewn stones or pillars. Below, and difficult of access, were two caves, connected, and used perhaps, for the utterance of oracles. Behind the row of pillars stood a stone, 6 feet square, with a square socket in it; one use suggested as possible for this was that it upheld the post which symbolized the sacred tree, the "green tree" of Isaiah. Near by was found a stone cistern used for the refuse from sacrifice. Of one particular sacrifice, that of human beings, evidence was found everywhere. In one cave, undisturbed on a flat stone, lay the skeleton of a newborn child. Human bones formed a great part of the refuse, and a further large group of adult skeletons were found, of which two at least had been dismembered by torture. But worse was found. "The whole area of the High Place was found to be a cemetery of newborn infants," buried, apparently, immediately after birth, and not for natural reasons. Thus we can see plainly what Jeremiah and the author of Isaiah were fighting against. In the Book of Jeremiah (vii. 31-32), and again in that of Isaiah (lvii. 4-5), there stand these words:

"For the children of Judah have done evil in my sight, saith the Lord; they have built the high place of Tophet, which is in the valley of the son of Hinnom, to burn their sons and daughters in the fire, which I commanded them not." "Are ye not children of transgression, inflaming yourselves with idols under every green tree, slaying the children in the valleys under the clefts of the rocks?"

The Books of Kings and Chronicles tell the story of the struggle between the prophets and the priests of the High Places, the old local shrines. Right down to the time of the Babylonian captivity, about 600 B.C., the worship went on both among Israelites and Jews.* Indeed, it is doubtful

* The Brazen Serpent was not an ancient, out of date idol, but a god actually worshipped at Jerusalem about 700 B.C.

whether the whole mass of the Hebrews adopted Jehovah as their God, until the Remnant of them returned from the captivity. To compare the relics at Gezer with the Books of Jeremiah and Isaiah is to understand the extraordinary courage and loftiness of the prophets and their followers in a world full of physical horror and savagery.

Thus the two strands of thought have combined, and made a new force of belief in the facts underlying the Bible, and a new conception of its meaning to the mind of to-day. Darwin spoke of evolution as a way of creating new forms, but he did not say that the new forms were either better or worse than the old. In fact he showed that creatures have sometimes changed from a more advanced and complex to a simpler structure, because the latter suited their surroundings best. And all natural evolution may be of either of these two kinds. But man's history shows connected and continuous change of another sort. There has been, men now believe, a development of the desire for goodness. There has been, in some spirits, at all times, a constant effort towards it. Great parts of the history of this moral evolution is contained in the Bible. The Old Testament shows thought toiling upwards from the lowly images of tribal gods, to the vision of the great God of Righteousness. On the basis of the Old Testament rises the teaching of the New.

The Bible may show us God speaking through His creatures, whereas our grandparents heard in it God speaking to His creatures. Yet, nowadays, we do not belittle it for this. The days of destructive attacks on the Bible are over. In the second half of the 19th century, science was busily exploring the new fields of knowledge, both in living and dead matter. Scientific men were dealing mainly with things of which some tangible evidence could be obtained, by the eye or under the microscope ; and they were inclined to deny the existence of that which could not in some way

be approached materially. But the science of the 20th century has gone far beyond the science of the 19th. It is now concerned with forces and forms which cannot ever be seen ; their existence has to be inferred by mathematical and physical calculations. In every branch of science we have to recognize new, mysterious elements and powers that have only just come into our ken at all, and which we do not as yet understand. Thus the attitude of science towards the great mysteries of life is much humbler than it was forty or fifty years ago. Indeed, it is science that is compelling us to admit the existence of immaterial things, and of things of which hitherto we never dreamed. Much less material views of life prevail. Some would say that the days of militant atheism are over.

BOOK LIST

Author.	Book.	Publisher.
Bury, J. D. . .	Cambridge Ancient History (vols. i. and ii.)	Cambridge University Press.
Breasted, J. H. . .	Ancient Times	Ginn.
Budge, E. A. W. . .	The Rosetta Stone	British Museum Publications.
Carpenter, J. E. . .	The Bible in the 19th Century	Longmans.
Darwin, F. . .	Life and Letters of Charles Darwin	Murray.
Darwin, C. . .	Voyage of the <i>Beagle</i>	—
" . . .	Origin of Species	—
Gosse, E. . .	Father and Son	Heinemann.
Hodder, E. . .	Life and Work of the Seventh Earl of Shaftesbury	
MacAlister, R. A. S. . .	(1) Bible Sidelights from the Mound of Gezer	Hodder & Stoughton.
	(2) A History of Civilization in Palestine	Cambridge University Press.
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Bury, J. B. . .	A History of Freedom of Thought	Williams & Norgate.
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CHAPTER XI

POOR LAW AND TRADE UNIONS

I. THE POOR LAW

IN a previous volume the story has been told of the administration of the Poor Law to 1830. The system by which each parish looked after its own poor people under the eye of the Justices of the Peace had broken down under the forces of the Industrial Revolution.* By 1830 the evils of indiscriminate, though niggardly, out-relief had lowered wages, raised the poor rate, and had brought the great mass of labourers and large numbers of the town workers to a position in which they depended on the Poor Law to eke out a living. Very few had a good word to say for it by 1830. In 1832 a Royal Commission was ordered to inquire into the Poor Law, and after two years' work, their report was made the basis of the Poor Law Act of 1835. This Act changed the whole system.

The main work of controlling the relief of the poor was taken from the Justices and overseers.† To do this work, there were to be elected the "Guardians of the Poor." Rate-payers and property owners were to choose them. They were to have charge of poor relief not in single parishes,‡ but

* See "*Piers Plowman Social and Economic Histories*," Book VI., Chap IX.

† A Justice of the Peace was ex-officio a guardian for the Union in which he lived. Other guardians had to have a property qualification of £40.

‡ Unless the Commissioners (see below) decided that a big parish should count as a Union.

in groups of parishes, called "Unions." All that the overseers still had to do was to assess the poor rate, have it collected, and account for its expenditure. A man who wanted relief must now apply to the Guardians, and they would give it, if they thought right, by their paid servant, the Relieving Officer. Only in case of absolute emergency could the Justice or overseer now order relief. The Guardians were to act under the supervision of the "Poor Law Commissioners," * a new Government body of three, appointed by the Crown for five years, to mark out the unions, make regulations, and inspect the Poor Law work by means of their local inspectors.

This Act represented the newest ideas of its time for meeting new needs. The Guardians were elective, because many people thought that only elected men really obeyed general wishes. They were also a special group formed to do special work.

Together with this change in machinery, the ideals of Poor Law relief were altered. The burden of rates had grown, not because of the help given to the old, the infirm, and the helpless, but because money was paid to partly employed people, or to unemployed people who were able to work.

"It is now our painful duty to report that the fund which the 43rd Elizabeth † directed to be employed in setting to work children and persons . . . using no daily trade, and in the necessary relief of the impotent, is applied to purposes opposed to the spirit of that law, and destructive to the morals of the most numerous class."

Thus wrote the Commissioners in 1834. They declared that the rate aid to the partly employed and the able-bodied must cease, even at the cost of sternness and severity. To this, their chief care was given. In the Act of 1835 the new

* They were continued until 1847; from 1847 to 1871, the central authority was called the Poor Law Board, and after 1871 this became part of the Local Government Board, now the Ministry of Health.

† The Act of 1601.

Poor Law Commissioners were ordered to make rules for outdoor relief, and their rules were quite definite. Outdoor relief for the able-bodied was forbidden; those who wanted help must come into the workhouse. Only able-bodied widows and, in a few cases, other women, might be helped in their own homes. Such were the new rules.

This Act brought about a complete reversal of all that the poor had known. It was impossible to apply the new rules fully in towns, where the bad trade of the 'thirties and 'forties caused frequent times of unemployment. Guardians were allowed to give men relief in their homes, provided first that they were earning no wages, second, that half the help was given in bread or meat or medicine, and third, that the man did a prescribed daily task in the "Labour Yard" at the workhouse, where stones were broken, wood chopped, and oakum picked. In the country districts the rules were gradually enforced. Many people abused them for their harshness, but so strong was the general fear of the old high poor rate and widespread outdoor relief, that it was more than two generations before public opinion began to look on unemployment not as a fault to be punished, but as a misfortune to be insured against.

After 1835 the poor rate fell. In 1834 it was over £6,000,000; ten years later, with a larger population, it was not quite £5,000,000. This economy meant much suffering among poor people, yet indirectly it helped to raise wages, and this did good in the long run. Men would not accept the old low wages when there was nothing coming in from the parish.

The newly created unions needed larger workhouses than the little old parishes had done. Great barrack-buildings were erected, and from 1835, the new workhouse, often called "the Union," became the symbol of the Poor Law. To the respectable poor, it was the most odious building in

town or countryside. Into its dreary gates must go every able-bodied person who applied for support, except those mentioned above. Many able-bodied men would rather starve, like the carpenter described by Mayhew,* than "go into the House." This was partly because life in the workhouse made it hard to get back into work. The usual way of finding work was to go from one yard or one house of call to another, from very early hours. It took the whole day. But men "in the House" were only allowed out at certain times, and thus they were hardly able to set about getting work at all. Thus, for years, and indeed down to the present day, if a man has once gone into the workhouse, he may easily get into the way of staying there. It was because this became so clear, that from about 1895 *Guardians* began to increase outdoor relief. Moreover, another result was that the vast mass of unemployed or distressed people kept away from the Poor Law officials altogether.

From 1601 the Poor Law had dealt with quite another set of people beside the able-bodied; these were the impotent, that is, those who were helpless, because they were old, or ill, or else because they were children. For these people, in 1834, special plans had been laid; the children, said the Royal Commissioners, should be sent to school, the sick carefully nursed, the old given comfortable quarters in which to spend their last days. Many of them were best looked after in their own homes, and to them outdoor relief might still be given. But as the *Guardians* all over England fell in with the new rules, many forgot that in 1834-35 the common workhouse had been intended for strong able people only; they used it also for the old, disabled, and sick, only relieving them fully if they would come into the House. *Guardians* were afraid of doing too much and spending too much. Thus, from 1835 onwards, the workhouse became the

* See p. 76.

home of all kinds of impotent people. If an old couple reached such a degree of poverty that the 2s. or 3s. of out-relief, eked out by pawning and selling and scraping, could not be made to do, into the workhouse they must go. If an imbecile was found wandering, the workhouse was the right place for him. Children were to be found there too, and infirm people; in fact, every kind and class, any one who needed complete maintenance. Such were the workhouse inmates in 1836, and very much the same were they in 1906; in many ways, they are still as mixed and various in many workhouses to-day. In 1834 the Commissioners had described the parish workhouse, with its dozen or more neglected children, its handful of able-bodied paupers, the group of old decrepit men and women, a blind person, and a couple of idiots, with at times the addition of fever patients, consumptives, or other poor sick people. In 1909 things were only a little better in many of the great union workhouses. Of one, the women's part was described thus:

"In the female dormitories and dayrooms, women of all ages, and of the most varied characters . . . necessarily associated together. . . . There are no separate bedrooms, there are not even separate cubicles. The young servant out of place, the feeble-minded woman of any age, the girl with her first baby, the senile, the paralytic, the epileptic, the respectable deserted wife, the widow to whom outdoor relief has been refused, are all herded indiscriminately together."

Very often, children too were to be found there.

Another result of the Act of 1835 was that when outdoor relief was given it was administered in faulty ways. One main defect was that often the amount was too small to make any real difference in a poor home. This was illustrated by the family history of Will Crooks, later Member of Parliament for Woolwich. His family lived in Poplar, in a tiny one-roomed house, but they were fairly well off, for his father was a stoker on a steamboat, in regular employ. In 1857, however, he was carried home with a mangled arm,

and never after that day could be the bread-winner again. That part now fell to his wife, who had six little children to look after already. She became one of a typical London class, the sweated homeworker. Her son wrote in after days :

“ Those were very lean years indeed, and I don't know what we should have done, but for mother. She used to toil with the needle far into the night, and often all night long. . . . My elder brother was as clever with the needle as a woman, and often he would stay up all through the night with mother, helping her to make oilskin coats. . . . We were so poor that we children never got a drop of tea for months together. The very bread was so scarce that mother could not allow the three eldest more than three slices apiece at a meal, while the four youngest got two and a half slices. . . . I can picture her now as I used to see her when I awoke . . . making oilskin coats by candle-light, in our single room.”

At last Mrs. Crooks was forced to ask for parish relief. She went first to the paid official, the relieving officer, and then came before the Board of Guardians. The Guardians gave her 2s. and then 3s. a week and some bread. Now this amount of help could not really provide proper food or a healthy home for seven children. It just enabled Mrs. Crooks to get along, herself frightfully overworked, all the children half-starved, and the one room overcrowded and unhealthy. It did not even enable her to keep such a home together for long. Forty years later, when Will Crooks was himself a Guardian of the poor in Poplar, he found exactly the same mistake being made.

From 1835 onwards, attacks began on the workhouse. The most famous is the first part of “ Oliver Twist,” written in 1838. About twenty years later, in 1860, Will Crooks, then a little boy of eight, experienced the working of the very spirit that Dickens had attacked. For at last the Poplar Guardians refused to give Mrs. Crooks any more relief, and the family was compelled to come into the workhouse. There, according to the regulations, the children were parted from their father, and then the boys separated from the girls, and thrown

amongst a crowd of strangers. As in Oliver Twist's day, the workhouse food was still mainly gruel or "skilly." Crooks remembered, years after, how hungry he had been. More



FIG. 35.—" Oliver Twist asks for more."

From Cruikshank's Illustrations to " Oliver Twist."

than thirty years later, in 1892, when he became a Guardian, he found that the workhouse was still much the same as he had known it, and he did a great deal to make all workhouses cleaner and more orderly. Gradually, workhouse

management has improved so much that in 1909 Royal Commissioners reported :

“ These institutions are in nearly all cases clean and sanitary, and the food, clothing, and warmth are sufficient . . . for health.”

From very early days, people tried to get the children out of the general workhouse. From 1844, the Poor Law Commissioners urged Unions to join, and build a “ District School,” for in those days the only alternative was a school in the House itself. Only a few were actually built. They were great dreary places, built to hold several hundred children, grouped together by ages. In 1860 Will Crooks and his little brother were sent from Poplar Workhouse to the Poor Law School at Sutton. There the children were separated, and did not see one another again until they were sent for to go home. In the big, dull rooms, after school hours were over, there was no homely life and no occupation.

From about 1870,* another plan was tried. Workhouse children were boarded out in ordinary working-class families so that they might be brought up in happier, more normal surroundings. They shared in home life, and they went to the local elementary schools like other children. Twenty years later, after 1892, Crooks visited many boarded-out Poplar children. In 1903, he said in the House of Commons :

“ At one time there was no stronger advocate of boarding-out than myself. It is an ideal system in theory, but its success . . . has yet to be proved. Many requests are made by country people to be allowed to adopt children, . . . but when inquiries come to be made, . . . the Guardians generally find it is hoped to make a profit. I have visited a village where a widow boarded four children—two more than the law allows. For these children she was paid 16s. a week. She lived in a district where the labourers’ wages were only 11s. . . . The boarded-out children, so far from losing the pauper taint, are more frequently known by the name of the Union from which they come than by their own names. Boarding-out is all right in good homes ; the difficulty is to find good homes.”

* *The Poor Law Board laid down rules for boarding out in November, 1870.*

The 19th century had drastically reformed the Poor Law. It had striven sternly, though often with much misgiving, to carry out the principles of the Act of 1835. In fact, the typical 19th-century thinkers believed that poverty could almost be cured if men were forced to help themselves. They held that State aid and State support were destructive, in the main, of manly independence, and they acted on their beliefs.

The 20th century, however, opened a new era of thought. Typical thinkers of our time hold that poverty is complex in its origin. Its causes lie, it is true, partly in human failings, but still more perhaps in circumstances which the poor man, unaided, is powerless to overcome. The ill-health of men, women, and children, lack of employment for the bread-winner, the poverty which comes with old age, are all now regarded as causes which the State, much more than the individual, can and must prevent. In the year 1905 the general feeling of dissatisfaction with the Poor Law led to the appointment of a Royal Commission which reported in 1909. The majority of the commissioners recommended sweeping changes in the whole system of poor relief to bring it into line with 20th-century ideas ; the minority of the Commission went further and recommended that the Poor Law should be entirely swept away. Though the famous Report of 1909 was not acted on, the 20th century has done much to replace the Poor Law by other agencies, whose function is to prevent poverty by removing its more complex causes.

Mothers and young children are greatly helped by the medical services and Baby Welfare centres to be found in many towns. The health of the school children is attended to by the school medical agencies described in Chapter IX., under the Acts of 1906, 1907, and 1918. In 1908 the Old Age Pensions Act gave old folk a weekly pension at 70 years of age. This Act alone altered the outlook for the worker,

and the position of the old people, in a way that the men and women of 1835 could hardly have imagined. The Insurance Act, passed in 1911, was even wider in its scope, for it defended certain classes of workers from the dreaded disaster of ill-health and unemployment. Health insurance is now practically compulsory on all employed people above sixteen, and unemployment insurance, too, has been extended to almost all workers.* The national wealth is being used more fully than ever before to help the poorer citizens in these inevitable difficulties. They no longer lead directly to the workhouse.

II. TRADE UNIONS

i. 1830-1875

By 1830 the trade unionists of England had won one great victory. Since 1824 workers had been allowed to associate themselves together, to bargain with employers about wages and hours. Yet these "societies" held a curious position, for in law they were not corporations, and had none of the advantages of corporate life. These advantages are, that corporation property is specially protected by law, and that a corporation can bring a law-case against those who harmed it, or can be sued, instead of each member being responsible for acts done for the purposes of the whole body. But the trades unions had none of this special legal protection. Even if a secretary took the subscriptions and ran away, it was difficult to get him punished, because no single member of the society could sue him, as the damage was not to the single members personally.

In many ways, the trade clubs or societies of 1830 were unlike the vast unions of to-day. Many were very small. They were little clubs of local craftsmen, meeting on regular

* The amendments to these Acts, and the present condition of their administration, are very clearly described in the "*Labour Year Book*," 1925.

evenings at a local public-house, paying subscriptions, drinking much beer, and discussing the trade affairs of their own few streets. Each little club managed its own affairs, and struck or made terms with the few local masters, as it chose. Very rarely did strikes take place on the great national scale of the present day. In 1829, when poverty and lack of employment was very great, huge unions of excited, half-starved workers were formed, but they died away again, because the members could not pay anything towards expenses. Again in 1834, under the leadership of Robert Owen, a "Grand National Union" of working men did attract great numbers to join it, in London, in the north, and even in purely agricultural counties. But as one strike after another failed, because the Union could give no strike pay, it grew weaker, and finally was given up.

Only the small local clubs were firmly rooted, and these existed almost entirely among the skilled workers, such as the engineers and carpenters, and in the new trades among specialized workers, such as the cotton and woollen operatives. Among general labourers, trades unionism practically was unknown, instead of being the great force it is to-day. Even these societies were apt to have great difficulties with their members, who joined and left capriciously. For many societies gave but few benefits, and so the men lost little if they suddenly left off their membership.

Most of the workmen could neither read nor write. Then and later, one who could read was often chosen to read the newspaper to the rest; in return they helped him with his work, and he was nicknamed "the judge" or "the justice." Newspapers were so dear, that several men had to join before one could be bought. As trade widened out, wider knowledge was needed to understand its course, but for the workmen there existed neither the teaching nor the books that they can have to-day. In many ways they distrusted themselves,

and would not often stand forward to lead their mates. But under excitement they acted wildly. Often they had an intense suspicion of the masters. Masters, too, were of the dogged determination to keep the men under absolute authority. Mrs. Gaskell* tells how the masters in the cotton trade were doing badly, and needed to take work even at very low prices.

"But the masters did not choose to make all these circumstances known. They stood upon being the masters, and that they had a right to order work at their own prices. Now let us turn to the workman's view of the question. The masters (of the tottering foundations of whose prosperity they were ignorant) seemed doing well, . . . while they were starving, gasping on from day to day. So class distrusted class, and their want of mutual confidence wrought sorrow to both. There was a strike in Manchester. . . . Some of the owners steadily opposed the dangerous precedent of yielding one jot or one tittle to the outward force of a turnout. It was teaching the workpeople how to become masters, said they. . . . No one thought of treating the workpeople as brethren and friends, and openly, clearly, as appealing to reasonable men, stating exactly and fully the circumstances."

When masters and men differ, the trades union of to-day has many ways of dealing with the situation. The union of 1830 had only one main weapon, the strike, and used it very often. Before the strike began, there was little negotiation, often none, because of the bitterness on both sides, and because of the dislike of masters to meet men. For years, ordinary middle-class people regarded every union as a dangerous, even revolutionary group. Even in 1860, Mayhew wrote :

"The public generally are deplorably misinformed as to the character and purpose of trade societies. The common impression is that they are combinations of working men, solely with the object of exacting an exorbitant rate of wages from their employers, and that they are necessarily connected with strikes, and with sundry other savage and silly means of attaining this object."

Yet the unions were very valuable. The man who fell sick had then no help but that of charity or of his friends,

* In "*Mary Barton*," published in 1848. Mrs. Gaskell lived in Manchester from 1832.

when his own savings were spent. Old people had to come down in the world, often into the most miserable slum life. The unemployed man might easily be reduced to selling his tools, and then the chance of getting work was compromised. In those hard times, apart from charity and the workhouse and the "friendly society," the trade union was the only protection the working man had, quite apart from its activity in his trade-life.

The main forces which were altering the position of the unions between 1830 and 1875 were gradually felt and slow in their working. One was the great prosperity of the years 1850-1875. This meant that many men kept in fairly steady work, and could afford to make regular payments to union funds. Another was the expansion of education,* and the new desire for it among poor people. Lastly, new chances were opened up by the improved means of communication. Cheap trains were connecting one town with another; cheap quick postage could be counted on; penny newspapers began to appear. These changes meant simply that the branches of one big society could be held together and informed of one another's doings quite cheaply.

The effect can be seen in the history of the carpenters' societies. Early in the 'fifties, there were still numbers of isolated unions, some of carpenters, some of joiners. Members found that if many were out of work in one particular town, it was just then and there, in the time of need, that subscriptions failed, and help from other places was needed. Therefore, a movement arose for the union of these local societies, and in 1860 many joined together as the "Amalgamated Society of Carpenters and Joiners." The secretary chosen was a foreman, working in Sheffield, Robert Applegarth, a shrewd, humorous man, not obstinate, but firm as a rock, and very clever in managing money. Year by year he

* See Chap. IX.

persuaded new branches to join. Thus a great contrast arose between the widespread amalgamation and the small local clubs that still survived in many towns. Such were the fork-grinders' union, the scissor-grinders', and the saw-grinders', in Sheffield. Among such societies, the violent spirit and narrowness of mind, common in 1830, was still to be found. It was among these Sheffield unions that murderous outrages were planned against non-unionists, a thing impossible in the branches of larger unions.*

By his management of the societies' funds, Applegarth provided his members with help in times of trouble. The subscription was high : in 1867 it was 1s. a week, and 3d. a quarter to the benevolent fund. In return, a man could apply for the following grants :

Home donation benefit † for 12 weeks at 10s. a week, and then for 12 weeks at 6s. a week.

Tool benefit, ‡ £5.

Sick benefit for 26 weeks at 12s. a week, and then for length of illness 6s. a week.

Funeral benefit, £12.

Accident benefit, £100 (for complete disablement).

Superannuation benefit, 8s. a week (for members of 25 years' standing) to 5s a week.

The capital owned by the amalgamated society soon grew very large.§ Of its safety in Applegarth's keeping there was never any doubt ; people marvelled at the honesty of such men, earning about 35s. a week, and handling thousands of pounds.

* In 1867 the Government sent special Commissioners to Sheffield and to Manchester to inquire into these crimes, and at the same time a Royal Commission examined the trades unions all over the country. The differences between the large well-ordered unions and some of the small ones were clearly established.

† Unemployment pay.

‡ Insurance of tools.

§ In 1858 the Amalgamated Society of Engineers spent over £62,000 in a single year, and kept a balance of nearly £29,000.

"This is the more remarkable," said one, "since societies for trade purposes are practically outside the law."

As the funds grew bigger, men thought more seriously before spending them. An engineer said of his mates :

"I should say that the members generally are decidedly opposed to strikes. The fact of our having a large accumulated fund tends to encourage that feeling. They wish to conserve that they have got !"

The carpenters were hindered from strikes in another way. All the branch societies chose one central executive committee, which had its office in one room of Applegarth's cheap little house in Lambeth. This executive had two great responsibilities. First, it settled any point not expressly covered by the written rules, and its decisions could only be upset by a general vote of all members. Secondly, no branch might make any request to a master without showing it to the executive, and gaining their approval. If a branch struck without leave, the executive gave no strike pay. About a third of the applications "to turn out," Applegarth said, were refused. When masters and men quarrelled, Applegarth first tried to see the masters. At first, this was very difficult. Burt, the miner, looking back to 1865, wrote : "In truth the employers of those days were more backward pupils than the workmen." But year by year, the employers * were learning that they must see union officials. Applegarth said that he never went to an employer merely to state a grievance, but always to make a suggestion. Having seen the employer, the secretary saw the men. Applegarth would face a whole meeting dead against him, and fight them. Once he said to carpenters on strike in Birmingham :

"I tell you honestly, that if I had been in Birmingham I should have been at my bench side on Monday morning last. Whenever the employers have tried to humiliate you, I have been in the front to

* Employers, too, were organizing. The master builders of London had begun a small society in 1834, and by 1870 it included all those of importance. In 1873, the Employers' Federation was founded ; it is the union of all employers' associations in all trades.

defend you ; now you are trying to humiliate the employers, I will be no party to it ! ”

Nearly always, union officials wanted to avoid strikes, because they often failed, and always cost money. They tried to get arbitration accepted by both sides. They preferred a conference between masters and men, and best of all, they liked a permanent board of masters and men, meeting to discuss hours and wages. Such a board is called a conciliation board. In Sheffield, soon after 1860, employers and carpenters were meeting in this way. When such a board succeeded, results could soon be shown ; codes of “ working rules ” increased, established by agreement of both sides. They dealt with hours, wages, overtime, modes of payment, and many technical arrangements. They were found in numerous trades, and they gradually brought some rules and some standards into the chaos that had followed the breakdown of the old stable trade customs and wages.

Thus, by 1875, in many respects, the trade unions had developed their modern characters. Yet in one way they had not. They were limited to the skilled trades, and even in them, to a small proportion of the men. Mayhew wrote of London :

“ The cabinet makers consist of two distinct classes, of ‘ society ’ and ‘ non-society ’ men. . . . The former class numbers between 600 and 700, and the latter between 4,000 and 5,000. As a general rule. . . . I find that the society men of every trade comprise about one-tenth of the whole. The difference between the tailor at the West End, working for better shops at the better prices, and the poor wretches starving . . . at the East End, has already been pointed out. The same marked contrast was also shown to exist between the society and non-society boot and shoe makers. There were found society men, renting houses of their own, some paying as much as £70 a year, and the non-society men overworked and underpaid, so that a few weeks’ sickness reduced them to absolute pauperism. Nor . . . can any other tale be told of the carpenters.”

Nor of most other crafts. In those days, unionism represented only a section of labour, not, as it does to-day, the main mass of labouring folk.

ii. 1875-1925

In the half century since 1875, trade unionism has expanded, and now includes and represents every type of manual labour. This is proved by the great extension of trade union membership.

THE GROWTH OF TRADE UNIONISM, 1874-1925

	Estimated numbers.	Estimated percentage of men wage-earners.
1874	about 1 million	scarcely 20 per cent.
1885	" 1 "	
1892	" 1½ "	
1902	" 2 millions	over 33 per cent.
1913	" 4 "	over 60 per cent.
1918	" 6½ "	
1920	" 8½ "	
1922	" 5½ "	
1923	nearly 5½ "	

In the years of depressed trade, from 1875 to about 1886, the membership was checked, but as soon as trade revived, it began to increase, and has continued to do so.

In some few industries, it was reckoned in 1913 that practically all the workers were in unions. The miners were the most important instance. The cotton operatives and the transport workers were almost as completely organized. In agriculture, however, the trade union membership was still very small.*

One main cause of this extension was certainly the fact that, since 1867, working men had obtained the vote for Parliamentary elections, and the influence in Parliament which they thus obtained was most effectively used through the unions. In 1871, Parliament allowed trade unions some of the privileges of corporate bodies; for instance,

* See Chap. III.

special protection against fraudulent officials was at length given to trade union funds. But in two other ways working men eagerly desired the removal of grievances. It was possible to use the laws passed to prevent conspiracy, to punish even peaceful, well-behaved strikers. Secondly, in the 16th century, a statute had laid down that if a workman ran away from his work, he was to be imprisoned as a criminal. On the master's complaint, a single justice could order his instant arrest. This law weighed heavily on workmen, for it was much used.* On the other hand, if a master turned away a man, at short notice, the man could only sue him for damages. Few unemployed men could afford to seek this remedy. In 1871, for the first time, a congress of many unions met in London, and appointed a "Parliamentary Committee" to press for a reform of both these laws. When Parliament met, after the General Election of 1874, the law relating to conspiracy was reformed. Men were only to be punished for actual violence. The old law of master and servant was swept away. Either master or man might sue the other for damages, in an ordinary civil court. There was no longer to be a distinction between them. One workman called this "the greatest boon ever granted to the sons of toil," and it was due largely to the unions.

Moreover, the workmen were now educated, and able to enter into trade union activity. Above all, they could see for themselves how valuable the work of the unions was. After the outbreak of war in 1914, wages rose, and labour was in so great demand, that men and women could afford to join unions. During the War, the Government carried on the tendency to recognize the unions in all dealings concerned with labour. Thus the unions played a great part, and could afford to undertake great plans for the workers' advantage. All this accounted for the great membership

* In 1863, over 10,000 cases were brought into the courts.

of 1920. But in 1921 there followed the onset of unemployment and bad trade. Just as in 1874-86, the inevitable result was that men could not afford the subscriptions, and dropped out. Moreover, the failure of the strike lessened the prestige of the unions. All these causes brought down the total numbers; and yet, trade unionism is still to-day far larger than it ever was before the war.

Owing to the growth in membership, many employers now feel about the men's unions in a new way. They believe that they are useful, because through them the whole mass of workmen can be tied down to agreements. In the South Welsh coal trade, about 1890, D. A. Thomas urged all his pitmen to join the strongest union open to them, for this very reason. Between 1890 and 1894, a great Royal Commission surveyed English labour and employment, and its members reported:

"Strikes are not embarked upon, where a trade society is strong, without . . . plenty of time for consideration, by the rules and procedure of such societies. . . . Quarrels are avoided, which, in badly organized trades, often arise from ignorance, false rumours, panic, misunderstanding and personal pride and prejudice. It is the practice of some of the best organized trade unions never to support a strike without a previous offer to submit the dispute to arbitration. Organizations of employers have a corresponding effect in preventing hasty lock-outs by individuals. The leaders of associations on either side are likely to have broader views than . . . local men."

Perhaps the most important development of trade unionism since 1875 has been the organization of the unskilled workers. Broadly, until the year 1900, all attempts to organize general labourers permanently had failed.* For example, in 1897, only about one labourer in ten, in London, belonged to the General Labourers' Union. But, by 1900, a new type of semi-skilled labourer was coming to the fore, owing to changes

* *The Dockers' Union is the well-known exception. Organized in the celebrated dock strike of 1889, the union has existed in strength ever since. Special conditions favoured the dockers. They were all concentrated within a few square miles, and they all worked for a few great companies.*

in methods of industry.* In many skilled industries, semi-skilled men and machine minders were growing numerous. On trains, trams, buses, and motors of all sorts, those whom Mayhew had classed in 1860 as unskilled, were now essential. They were educated, and knew the value of the unions; besides, many of them worked regularly together in large numbers and at the same centres, so that they could easily act together.

Thus there were numbers of men ready for unionism. There arose the new type of unskilled union, where those in the lower ranks of many different industries unite in one body. Such a union is the General Labourers' Union, or the Workers' Union, among whose members are to be found men from almost every trade.

Owing to the development † among the unskilled in some great industries, the old skilled unions were ready to make common cause with the new unions of "unskilled" men in their own trade. This had not always been so. In 1890, the secretary of a society of unskilled labourers had said that his men had no quarrel with the employers, but that their enemies were the skilled men in their trade, who tyrannized over them and would not let them attain skill. This attitude was very common, although it was skilled men, the engineer John Burns and the cooper Will Crooks, who led the ragged army of dockers in 1889. But now, about 1900, this old-fashioned jealousy began to weaken. This was clearly shown in the case of the railways. Soon after 1900, a movement began for the union of all, from the booking-office clerk to the unskilled yardman. There was a threat of a general stoppage in 1907, and a great railway strike in 1911, and at

* See Chap. VI.

† Among these "unskilled" unions, fear of non-unionists was much greater than in the "skilled" unions, because outsiders were so much easier to get. In recent years, this has caused many disputes and strikes.

both these times, the men won much. They gained recognition for their unions, and the establishment of conciliation boards, to deal with wages and hours. Encouraged by this, railwaymen felt a stronger unity among themselves. In 1913, the great railway unions—the Amalgamated Society of Railway Servants, the General Railway Workers' Union, and the United Pointsmen and Signalmen—all merged in one great body, the National Union of Railwaymen. Thus there began a new type of union among all workers of whatever sort or rank within a given trade, all standing in one battle front opposed to the employer.

In a third way, unionism has grown stronger. This was by federating in one great whole, all local unions in a given occupation. In the coal industry, a federation of all miners' unions was begun in 1886. James Welsh, a Scottish miner,* has described the enthusiasm awakened by Robert Smillie in men who had passed their lives in isolated Lanarkshire pit villages when he spoke to them of a federation :

“ One federation, linked together by common ideals, with common interests, bound by common ties, united by traditions, by creed, by class, by common tastes shared, by suffering and hardship.”

By 1913 the Miners' Federation was supported by nearly all local miners' unions. In the same way, in 1910, thirty-six different societies of waterside workers, seamen, dockers and carters, united to form the National Federation of Transport Workers. This is very powerful, because it can, at need, paralyze the work at our ports.

Thus there arose a really national organization of some great industries, and this has brought a new importance into trade disputes. Formerly strikes remained local, as a rule. But now, if a strike is authorized and led by the great leaders, it no longer means always only a local affair. It may become a question laid before the nation, by the cessation of some

* In his novel of mining life called, “ *The Underworld*.”

particular kind of work, in all parts of the country. This has created a strong impression in many kinds that the unions are nothing but fighters.

The other side of trade union work, since 1875, has been the working out of peaceful ways of settlement. More disputes are now ended by agreement than by strike; in short, conciliation has been tried. The main questions have been those of hours and of wages. As to hours, the unions have broken down the old 60-hour week, which was usual in the 'sixties, in trade after trade. Even before 1914, many trades had reached a 54-hour week. Since the War, there has been a steady shortening of the working day, until a 48-hour week is now quite common.

As to wages, it was the growth, after 1875, of trade union membership which made it possible to try new ways of settling them. For example, in coal mining, as the men began to join unions, it became easier for masters to meet men's delegates and reach a firm agreement. In Northumberland, after 1872, a mixed body of masters and men, called the "Joint Committee," was set up, to meet and decide questions affecting single collieries. The committee gained strength as unionism gained strength, and in 1894 owners and colliers set up a similar body to settle wages for the whole country. This board was unlike any of the conferences between master and men at strike times, for here they sat to discuss difficulties and remove them before they led to trouble. A trade unionist wrote of his own experience on a similar board:

"If a man were to do any good on a wages board, he had to learn and teach others how much the interests of employers and operatives are linked together."

Similar boards were established in the coal-fields of South Wales, Scotland, Durham, and the combined area of Lancashire, Yorkshire, the Midlands, and North Wales.

Thanks to these boards, from 1900 onwards, many

ranks of miners had a minimum wage secured to them. In Derby and Nottingham, when men and managers disputed about a place in a mine, some calling it "abnormal," and others not, two hewers and two officials judged, and if they could not agree, the joint committee heard the case. They worked so successfully, that even this difficult question led to very little trouble in those two counties. Indeed, the organized groups of masters and men in the coal industry were learning to co-operate.* It is this co-operation which many trade unionists value, because in practice they have found that it effects progress, even if slow progress.

Since 1830, the place of trade unions in the national life has changed completely. In 1830, they had no national importance. Now they have become more and more representative of a great part of the population. As such, they are constantly in contact with the Government, and their affairs occupy much of the time of Parliament.

At their best, trade unions are an expression of the law which underlies all human life, that by union or association men reach their highest good. All through history we see this law at work. "One who is incapable of association with others, or is independent and has no need of such association . . . is either a brute or a god," said Aristotle, more than three centuries before the birth of Christ. In the primitive village, in the feudal lordship, in the mediæval city, in craft gild and trading company, and in the many-sided life of the modern state, men have expressed their common humanity not in selfish isolation but in union for the common weal. A

* This co-operation broke down in 1912, when the great national coal strike took place. Its causes were, first, the increase in the prosperity of the export trade, which made the men press for rise of wages; secondly, the men's desire to have all the local minimum wages summed up and enforced by one general Act of Parliament; thirdly, local quarrels in particular districts over prices for "abnormal places." It resulted in the passing of the Minimum Wage Act. Many leaders regretted the strike, because it meant the breaking of existing agreements.

hundred years ago great thinkers, intent upon the virtues of the individual, seemed to deny this ancient truth. But the course of social history since 1830 has vindicated it. To trace this fundamental force at work through the past, and to see how it explains the present, is History's task. Associations of masters, unions of men, societies to promote great causes of all kinds are merely the forms in which this community spirit finds expression. Nations embody it, and in these latter days the League of Nations is an heroic attempt to realize for the sake of the whole human race a community larger and wider than any the world has ever known.

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